

April 28, 2017

**Virginia Coastal Zone Management Program  
Semiannual Section B.2-4 Report  
For the Period from October 1, 2016 – March 31, 2017**

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## **SECTION B.2 PERMIT ADMINISTRATION, MONITORING AND ENFORCEMENT**

### **1) DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)**

#### **a) DEQ – Virginia Coastal Zone Management Program**

Virginia CZM Program staff continued to work with our partner agencies to implement the Program over the last 6 months. For a full description of staff activities, please refer to the Section A report for Task 1.01.

#### **b) DEQ – Water Permitting Programs**

##### *DEQ- Virginia Water Protection Permit (VWPP) Program*

The Virginia Water Protection (VWP) Permit Program authorizes surface water withdrawal activities<sup>1</sup> and activities in wetlands and surface waters that may or may not require Clean Water Act section 401 water quality certifications. In addition to the permit processing and wetlands impact data for the Tidewater region of the Commonwealth, this narrative highlights any challenges encountered during the reporting period.

During the reporting period of October 1, 2016 through March 31, 2017, the VWP Permit Program issued 12 individual permits and 43 general permit coverages; processed one Notice of Planned Change on general permit coverages; and did not process any individual permit modifications or permit reissuances. For the purposes of this report, no permit application denials, withdrawals, or waivers were included.

The average time to process a general permit coverage was 24 days, and the average time to process an individual permit was 90 days. Processing delays occurred for one general permit coverage, exceeding the statutory limits for coverage issuance. Delay was due to the suspension of the application for lack of fee payment. One VWP individual permit exceeded the statutory processing limit by 125 days due to two lengthy application suspension periods, during which the cumulative impacts were reduced from 2.71 acres of wetlands to 1.61 acres of wetlands. The project was also coordinated for potential threatened and endangered species concerns.

Approximately 55 acres of wetland impacts occurred during the reporting period, and approximately 157 wetland credits were purchased at compensatory mitigation banks during this reporting period.

The following programmatic efforts occurred during the reporting period:

- DEQ completed the upgrade of its permitting and compliance databases and its reporting software tools.
- The VWP Permit Program provided Section 401 Water Quality Certification for the U.S. Army Corps of Engineers Nationwide permits.
- The VWP Permit Program coordinated with the U.S. Army Corps of Engineers for the reissuance of the State Program General Permit (17-SPGP-01).
- The VWP Permit Program continued to work with the Virginia Institute of Marine Science to develop wetland-condition assessment tools under existing grant funding from the U.S. Environmental Protection Agency's nontidal wetland grants program.

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<sup>1</sup> While VWP permits may authorize surface water withdrawal activities, data specific to streams, stream flow, or water quantity are not included in this program summary.

The VWP Permit Program did not receive comments, concerns, or procedures for expediting decision-making for the management of coastal resources.

*DEQ – Virginia Pollution Abatement (VPA) Water Permitting Program*

The Virginia Pollution Abatement permit (VPA) is required for facilities that manage wastewater, animal waste, biosolids or industrial sludges in such a manner that they do not have a discharge from the site. For example, an agricultural facility that temporarily stores wastewater to be land applied as part of an irrigation/fertilization program.

During the period between October 1, 2016 and March 31, 2017, four applications were received for modification of VPA Individual Permits that authorize the land application of biosolids, each is remains pending. However, three modifications were completed during the period for applications which were received prior to October 2016. The three modifications include two major modifications to add land to VPA Individual Permits that authorize the land application of biosolids, and one minor modification to a VPA Individual Permit that authorizes the land treatment of wastewater. Additionally, two applications were received prior to this period, one was for a reissuance and the other was a new issuance. The reissuance was completed during this reporting period. The issuance is pending.

During the period between October 1, 2016 and March 31, 2017, 10 applications were received for coverage under the VPA General Permit for Poultry Waste Management: eight applications received coverage, the other two were pending coverage as of March 31, 2017. No applications were received for farms, located in the Coastal Zone Management area, seeking coverage under the VPA General Permit for Animal Feeding Operations, during this period.

*DEQ – Virginia Pollution Discharge Elimination System (VPDES) Water Permitting Program*

There are a total of 295 individual municipal and industrial CZM area VPDES permits. This number and the numbers in the table above represent typical activity in the program.

There are also numerous facilities registered under general permits in CZM areas including 65 car wash, 105 concrete products, 15 cooling water, 268 domestic sewage  $\leq 1,000$  GPD, 61 nonmetallic mineral mining, 37 petroleum, 13 potable water treatment, 55 seafood processors, and 534 industrial storm water. The individual municipal and industrial permits, domestic sewage general permit and industrial storm water general permit are estimates as the database that queries this information was malfunctioning at the time of this report. But overall, these represent typical numbers for permit registrants in CZM areas in Virginia. There are a number of general permit coverages that are automatically covered under a permit (e.g., pesticide applications and hydrostatic testing) and are not entered into the CEDS data base.

VPDES/VPA - April 1, 2015 – September 30, 2015										
	Permits Issued / Avg Proc. Days <sup>(1)</sup>		Permits Reissued / Avg Proc. Days		Permits Modified** / Avg Proc. Days		Denied / Avg Proc. Days		Permits Reissue Pending / Avg Proc. Days	
VPDES	1	974	21	201	1	141	0	N/A	14***	NA
VPA	0	NA	1	205	3	131	0	NA	5	132
VPA GP	8	40.75	0	NA	0	NA	0	NA	2	45

**Processing day is the amount of time between receiving a complete application and making the final case decision (issuance, reissuance, modification, etc.).**

\* Information from CEDS (Comprehensive Environmental Data System) database

\*\* Major modifications

\*\*\*This represents existing VPDES individual permits expired but pending through March 31, 2017.

### c) DEQ – Water Program Enforcement and Compliance

DEQ continues to apply both informal and formal enforcement measures in the enforcement program. Reference Table 1, below.

Informal measures, such as Warning Letters and Letters of Agreement, are used in those cases where non-compliance is not significant in nature and where compliance can be achieved in a short period of time. For the period October 1, 2016 through March 31, 2017, DEQ issued 125 Warning Letters and one Letter of Agreement for violations of VPDES, VPA, VWPP, and Ground Water program requirements.

Formal enforcement actions are used in those cases where non-compliance is more serious or may take a significant amount of time to correct. Formal measures generally involve the issuance of a Notice of Violation followed by a Consent Order, or an Executive Compliance Agreement in the case of a state agency. In some cases, Unilateral Administrative Orders or court orders may be sought. Between October 1, 2016 and March 31, 2017, DEQ issued 23 Notices of Violation for violations of VPDES, VPA, VWPP, and Ground Water program requirements. During the same period, the agency concluded enforcement cases with the issuance of 12 Consent Orders that assessed a total of \$108,674.75 in civil charges.

**Table 1**

Measure	Action Type	Count	Total Civil Charges Assessed
Informal	Warning Letters	125	N/A
Informal	Letters of Agreement	0	N/A
Formal	Notices of Violation	23	N/A
Formal	Consent Order	12	<b>\$108,674.75</b>
<b>Total</b>		<b>160</b>	<b>\$108,674.75</b>

#### d) DEQ – Air Permitting Program

### OFFICE OF AIR PERMIT PROGRAMS PERMITS ISSUED REPORT FOR VIRGINIA'S COASTAL RESOURCES MANAGEMENT PROGRAM

Period: October 1, 2016 – March 31, 2017

PERMIT TYPE	NUMBER OF PERMITS ISSUED	AVERAGE PROCESSING TIME (Days)
PSD & NA	1	13
Major	0	NA
Minor	31	32
Administrative Amendment	7	25
Exemptions	6	18
State Operating	3	104
Federal Operating (Title V) Initial Issuance	0	NA
Federal Operating (Title V) Renewal	3	1013
Acid Rain (Title IV)	0	NA
Total Number Permits Issued	<b><u>51</u></b>	

\* The average processing time is determined by computing the difference between when the application was deemed administratively complete and when the permit was issued.

Note: The information provided for this report includes data from the Northern Virginia Regional Office, Portions of the Piedmont Regional Office and the Tidewater Regional Office only.

#### Definitions:

Prevention of Significant Deterioration (PSD) = A source which emits **250 tons or more** per year of any regulated pollutant or is one of 28 specific industries listed in the state regulations and will emit 100 tons per year of a regulated pollutant.

Major = A source which emits, or has the potential to emit, **100 tons or more** per year of any air pollutant.

Minor = A source which emits, or has the potential to emit, **less than 100 tons** per year of any air pollutant.

State Operating= Permit written pursuant to 9 VAC 5-80-800 et al.

Administrative Consent Agreement = An agreement that the owner or any other person will perform specific actions to diminish or abate the causes of air pollution for the purpose of coming into compliance with regulations, by mutual agreement of the owner or any other person and the Board.

Administrative Amendment = Administrative changes made to the permit to clarify or correct an issued permit. For example, typographical errors, name changes, etc.

Exemption = Facilities are exempted from permitting requirements by exemption levels defined in 9 VAC 5-80-1105.

Federal Operating (Title V) = a source that emits **10 tons or more** per year of any hazardous air pollutant, **or 25 tons** per year of any combination of hazardous air pollutants or emits any criteria pollutant above 100 tons per year.

Acid Rain (Title IV) = Permits issued specifically to address SO<sub>2</sub> and NO<sub>x</sub> from electric generating units covered under the Acid Rain regulations.

**OFFICE OF AIR PERMIT PROGRAMS  
PERMITS PENDING REPORT FOR  
VIRGINIA'S COASTAL RESOURCES MANAGEMENT PROGRAM**

Permits pending as of March 31, 2017

PERMIT TYPE	NUMBER OF PERMITS PENDING
PSD & NA	3
Major	1
Minor	28
Administrative Amendment	1
Exemptions	4
State Operating	10
Federal Operating (Title V) Initial Issuance	2
Federal Operating (Title V) Renewal	34
Acid Rain (Title IV)	3
Total Permits Pending	<b><u>86</u></b>

Note: The information provided for this report includes data from the Northern Virginia Regional Office, Piedmont Regional Office and Tidewater Regional Office only.

**OFFICE OF AIR PERMIT PROGRAMS  
PERMITS WITHDRAWN AND APPLICATIONS DENIED REPORT FOR  
VIRGINIA'S COASTAL RESOURCES MANAGEMENT PROGRAM**

Period: October 1, 2015 – March 31, 2016

PERMIT TYPE	NUMBER OF PERMITS WITHDRAWN	NUMBER OF APPLICATIONS DENIED
PSD	0	0
Major	0	0
Minor	2	0
Administrative Amendment	0	0
Exemptions	0	0
State Operating	0	0
Federal Operating (Title V)	0	0
Acid Rain (Title IV)	0	0
Total Permits Rescinded	<u>2</u>	<u>0</u>

Note: The information provided for this report includes data from the Northern Virginia Regional Office, Piedmont Regional Office and Tidewater Regional Office only.

**e) DEQ – Air Program Enforcement and Compliance**

DEQ continues to apply both informal and formal enforcement measures in its air enforcement program. Reference Table 1, on the following page.

Informal measures include Requests for Corrective Action, Informal Correction Letters, Warning Letters, and Letters of Agreement. These actions are used in those cases where non-compliance is not significant in nature and where compliance can be achieved in a short period of time. During the six-month period beginning October 1, 2016 through March 31, 2017, DEQ issued 19 Requests for Corrective Action, and 23 Warning Letters.

Formal enforcement actions are used in those cases where non-compliance is more serious or may take a significant amount of time to correct. Formal measures generally involve the issuance of a Notice of Violation and negotiation of a Consent Order, or an Executive Compliance Agreement in the case of a state agency. In some cases, Unilateral Orders or court orders may be pursued. Between October 1, 2016 and March 31, 2017, DEQ initiated four new formal enforcement actions via issuance of Notices of Violation. Additionally, the Agency issued 12 Consent Orders; assessing \$96,810.00 in civil charges.

**Table 1**

Measure	Action Type	Count	Total Civil Charges Assessed
Informal	Requests for Corrective Action	19	N/A
Informal	Informal Correction Letter	0	N/A
Informal	Warning Letters	23	N/A
Formal	Notices of Violation	4	N/A
Formal	Consent Orders	10	\$96,810
<b>Total</b>		<b>56</b>	<b>\$96,810</b>

## f) DEQ – Erosion and Sediment Control

### Summary of Specific Outputs:

Specific Outputs	Progress / Status
11 CZM Chesapeake Bay Land Disturbing Activities Permitted - Projects less than 1 acre found within Chesapeake Bay Designated Areas.	Permit coverage has been issued and projects are under construction. Compliance is achieved through ongoing permit review, technical assistance, and project inspection.
227 CZM Small Construction Activities Permitted- Land Disturbing Activities greater than or equal to 1 acre and less than 5 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved through ongoing permit review, technical assistance, and project inspection.
61 CZM Large Construction Activities Permitted- Land Disturbing Activities greater than or equal to 5 acres and less than 10 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved through ongoing permit review, technical assistance, and project inspection.
66 CZM Large Construction Activities Permitted- Land Disturbing Activities greater than or equal to 10 acres and less than 50 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved thru ongoing permit review, technical assistance, and project inspection.
7 CZM Large Construction Activities Permitted- Land Disturbing Activities greater than or equal to 50 acres and less than 100 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved thru ongoing permit review, technical assistance, and project inspection.
5 CZM Large Construction Activities Permitted- Land Disturbing Activities greater than or equal to 100 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved thru ongoing permit review, technical assistance, and project inspection.
377 Total CZM Land Disturbing Activities Permitted thru coverage under the Construction General Permit.	Coastal Zone Management resources are conserved and restored through permit compliance.



## **Supplemental Narrative:**

Considerable erosion and sediment control and stormwater management progress occurred during the performance period. New and improved requirements for project stabilization during construction and recently enhanced post construction requirements will result in further improvements to coastal zone resources. The new post construction requirements have been developed to more closely mimic predevelopment hydrology found in a naturally wooded site condition. The implementation of these new requirements will result in less downstream sediment export and fewer nutrient export impacts from land development.

Erosion & Sediment Control (ESC) and Stormwater Management (SWM) Laws and Regulations are designed to help reduce pollutants in the Chesapeake Bay, and require localities, developers, and consultants to be certified in various knowledge and practices. The law requires DEQ to offer two certification tracks, one for ESC and another for SWM.

Each track includes training courses to assist people to become certified as: Program Administrators, Inspectors, Plan Reviewers and Combined Administrators, and requires individuals to pass a professionally administered certification exam. Each certification type is valid for 3 years and individuals can recertify by completing continuing education throughout the certification period.

Between October 1, 2016 and March 31, 2017 Virginia certified or recertified:

- 113 people in both Stormwater and Erosion – called “Dual Certification”
- 121 people in Stormwater Management only
- 445 people in Erosion and Sediment Control only.

As of March 31, 2017 total certified individuals in Virginia are as follows:

- 786 total people Dual Certified. (610 people as of September 30 2016)
- 681 total people certified in Stormwater Management only. (626 people as of September 30, 2016)
- 2,397 total people certified in Erosion and Sediment Control only. (2,523 people as of September 30, 2016).

## **g) DEQ- Office of Stormwater Management – Local Government Assistance Programs- Chesapeake Bay Preservation Act**

### **Summary**

#### **Program Description**

The Bay Act program is designed to improve water quality in the Chesapeake Bay and other waters of the State by requiring the use of effective land management and land use planning. Specifically, these requirements fall into three implementation phases. Phase I consists of local governments designating and mapping Chesapeake Bay Preservation Areas (CBPAs) and adopting land use and development performance criteria to protect those features. CBPAs include Resource Protections Areas (RPAs) and Resource Management Areas (RMAs). RPAs are made up of tidal wetlands, tidal shores, nontidal wetlands connected and contiguous to tidal wetlands or perennial streams and a 100-foot fully vegetated buffer. RMAs include lands adjacent to RPAs that are made up of land features such as highly erodible soils, steep slopes and floodplains. Sixty of the eighty-four Tidewater localities have identified their entire jurisdiction as an RMA. Phase II consists of the incorporation of water quality protection measures into local comprehensive plans. Phase III involves the review and revision of local land use codes to include specific standards that implement water quality performance criteria.

### Technical Assistance & Training

During the reporting period, October 1, 2016 – March 31, 2017, staff continued to provide assistance and training to the Bay Act localities. For this period, 5 formal outreach and 16 technical assistance events conducted.

### Environmental Impact Reviews

Through the Environmental Impact Review process, staff also continued to review plans for State and Federal project to ensure those projects were consistent with the Bay Act. During the reporting period, 11 environmental impact reviews were conducted.

### Compliance Reviews

As indicated in the previous semi-annual report, the Chesapeake Bay Preservation Act Compliance Review process was re-initiated in September of 2015, after having been suspended for a period of three years to allow Local Government Assistance Programs (LGAP) staff to work on local stormwater program development. During the reporting period, eight new compliance reviews were initiated, and six have been completed. Since the compliance reviews were reinitiated in 2015, a total of 25 reviews were initiated and 17 have been completed.

During these reviews, staff assess whether or not the locality is implementing soil & water quality conservation assessments for agricultural lands, the status of the water quality provisions of the local comprehensive plans, how well local governments are ensuring that impervious cover is minimized, indigenous vegetation is maintained and land disturbance is minimized on approved development projects and how well performance criteria are being applied to the use and development of land.

## **2) VIRGINIA MARINE RESOURCES COMMISSION (VMRC)**

### **a) VMRC – Habitat Management Division**

During the period October 1, 2016 through March 31, 2017, the Habitat Management Division received 1009 applications for projects involving State-owned submerged lands, wetlands or dunes. These applications were for projects such as piers, boathouses, boat ramps, marinas, dredging and shoreline stabilization. As the clearinghouse for the Joint Permit Application all applications were assigned a processing number by the Division and forwarded to the appropriate agencies, including, local wetlands boards, the Norfolk District of the U.S. Army Corps of Engineers, the Department of Environmental Quality, VIMS and others as necessary.

A public interest review was initiated and site inspections were conducted for those projects requiring a permit from the Marine Resources Commission. Likewise, Habitat Management staff also conducted site inspections for all projects requiring a local wetlands board permit and evaluated each local board decision for Commissioner review. Habitat Management staff also conducted compliance inspections on permits issued by VMRC and local wetlands boards. One notice to comply was issued during the period.

The Habitat Management Staff completed actions on 946 applications received during the period. Action on most applications was completed within 90 days after they were received. As such, a number of the actions taken during the period were for applications received prior to October 2016. Similarly, those applications received near the end of the current reporting period are still under review. Habitat Management Staff also participated in the inter-agency review process involving general permits for Virginia Department of Transportation projects.

In addition to staff actions, the Full Commission considered 37 projects. During the reporting period, the Commission considered 27 protested projects or projects requiring a staff briefing, The Commission also approved 10 projects over \$500,000.00 in value.

During the reporting period local wetland boards throughout Tidewater Virginia acted on 260 projects involving tidal wetlands. Of this total, 205 were approved as proposed, 47 were approved as modified, 1 was denied, 4 are pending, 1 was inactivated, 4 no permit was required, and 40 required compensation either on or off site (18), or through payment of an in lieu fee (22) accounting for 10,723 square feet of tidal wetland impacts.

#### **b) VMRC – Fisheries Management Division**

At the November 2016 meeting, the agency established an emergency amendment to the regulation for summer flounder. The summer flounder amendment established to only allow each vessel to land the 7,000 pound trip limit one time from November 10 through December 31, 2016. Also at the November 2016 meeting, the commission established a harvest composition requirement of at least 25 percent of smooth dogfish, by weight, in order to completely process and remove smooth dogfish fins at sea to comply with Addendum IV to the Atlantic States Marine Fisheries Commission's Interstate Fishery Management Plan for Atlantic Coastal Sharks. The commission established a tolerance to the current 5,000-pound commercial trip limit for spiny dogfish, and increased the trip limit to 6,000 pounds.

At its December 2016 meeting, the agency established an amendment by way of emergency to the regulation for cobia and amberjack. The commercial cobia season closed for the year on December 15, 2016. The commission adopted an amendment by way of emergency amendment lowering the commercial coastal area striped bass quota for 2017 as 136,141 pounds.

At its February 2017 meeting, the agency adopted amendments for summer flounder to modify the landing dates, landing periods, possession limits and landing limits for summer flounder commercially harvested outside of Virginia waters. Set aside only 100,000 pounds for harvest in the Virginia's tidal waters, adjust the split in quota from 70/30 to 60/40 percent, allowing 60 percent of the quota to be taken during this first window, with a 7,500-pound trip limit, additionally, the commission made the spring opening from March 1 through April 30th.

At the March 2017 meeting, the agency adopted an amendment to cobia to make a recreationally 40-inch total length minimum size; a one fish per-person possession limit; a daily vessel limit of 3 fish, only one of which may be greater than 50 inches total length; and a season start date of June 1 through September 15. The gaffing prohibition still remains in effect.

#### **c) VMRC – Law Enforcement Division**

Enforcement under "Other Agency" refers to summons issued for other agencies' laws, code or regulation sections. The majority of the summons in this category are for DGIF regulations on boating safety laws, expired boat registration, no life jackets, flares, etc.

Summons under "Police Powers" are all criminal vs fisheries. These are the reckless driving, drunk driving, driving without a license/suspended license, shoplifting, possession of controlled substances.

## VIRGINIA MARINE POLICE ARRESTS/CONVICTIONS SUMMARY BY CATEGORY

REPORT FORMAT: FEDERAL FISCAL YEAR

AREA: ALL AREAS

START PERIOD: 10/01/2012

END PERIOD: 09/30/2017



Category	2012/2013		2013/2014		2014/2015		2015/2016		2016/2017	
	Convictions	Arrests	Convictions	Arrests	Convictions	Arrests	Convictions	Arrests	Convictions	Arrests
Buyers	6	8	10	10	5	6	2	2	0	0
Casting Garbage/Trash	0	0	5	5	1	1	3	3	0	0
Clams	7	9	4	7	2	3	3	3	0	0
Commercial Fishing License	4	6	6	10	7	10	17	25	2	3
Conchs	6	8	7	9	1	1	3	3	0	0
Crabs	43	50	92	120	121	138	70	102	10	11
Federal Violation	0	0	0	0	0	0	0	0	0	0
FIP Violations	63	63	58	60	76	81	44	45	3	3
Fish	219	253	75	81	150	163	165	191	56	64
Freshwater Fishing without a license	14	18	12	16	20	22	23	24	2	2
Gill Nets	9	11	14	18	17	24	13	25	5	5
Habitat/Wetlands	0	0	0	0	0	0	0	0	0	0
License Tags	0	2	3	4	1	1	4	9	0	0
Mandatory Reporting	1	58	0	0	9	18	3	8	1	3
Misc	0	0	0	0	0	0	0	0	0	0
Non-residents	0	0	0	0	0	0	0	0	0	0
NSSP	0	0	0	0	0	0	0	0	0	0
Other Agencies	220	255	227	279	383	462	277	335	47	60
Oysters	139	226	109	161	174	297	103	190	49	60
Piers	0	0	0	0	0	0	0	0	0	0
Police Powers	95	109	76	88	95	114	116	127	16	19
Removal of Obstructions	3	5	1	1	1	1	3	3	0	0
Resisting officer	0	0	0	0	0	0	0	0	1	1
Shellfish	11	14	5	6	14	25	7	8	1	2
SW Recreational Licenses	204	262	190	241	205	234	229	251	28	28
<b>TOTALS:</b>	<b>1044</b>	<b>1357</b>	<b>894</b>	<b>1116</b>	<b>1282</b>	<b>1601</b>	<b>1085</b>	<b>1354</b>	<b>221</b>	<b>261</b>
<b>PERCENT OF CONVICTIONS:</b>	<b>76.93%</b>		<b>80.11%</b>		<b>80.07%</b>		<b>80.13%</b>		<b>84.67%</b>	

### 3) VIRGINIA DEPARTMENT OF HEALTH (VDH) – DIVISION OF SHORELINE SANITATION

From October 1, 2016 through March 31, 2017, the VDH Division of Shellfish Sanitation had 1157 acres of shellfish grounds closed to harvesting. There were 829 acres of shellfish grounds reopened.

Activities of the Virginia Department of Health for the Virginia Coastal Resources Management Report are summarized below. This includes statics on applications for sanitary facilities at marinas and other places where boats are moored.

The Department received and reviewed a total of 14 VMRC Permit Applications, and processed as follows:

Nine (9) Permit Applications needed action in the Marina Program.

Fifteen (15) applications were approved based on meeting the requirements of providing adequate facilities.

Two (2) applications were denied because of inadequate facilities.

## 4) Department of Conservation and Recreation (DCR)

### a) DCR - Division of Soil and Water Conservation

#### Nutrient Management

DCR Nutrient Management Staff have been active in developing, reviewing nutrient management plans, enhancing private sector plan development, and other nutrient reduction activities to achieve the Commonwealth's nutrient reduction commitments of Chesapeake Bay TMDLs. In the coastal zones of Virginia, DCR staff have overseen the development of nutrient management plans covering 5,264.94 acres during the reporting period (10/1/2016 – 3/31/2017). Many plans are active for up to three years, but all new or revised acreage developed in the coastal zones during the reporting period is summarized in the following table:

Table 1: Planned nutrient management acreage by land use and costal management zones. Plans started between 10/1/2016 – 3/31/2017.

CZM Basin	Number Of Plans	CZM Crop Acres	CZM Hay Acres	CZM Pasture Acres	CZM Specialty Acres	Total
Albemarle Sound	3	538.40	-	-	-	<b>538.40</b>
Atlantic Ocean	-	-	-	-	-	-
Chesapeake Bay Coastal	5	1,032.76	-	-	-	<b>1,032.76</b>
Chowan	2	211.39	-	-	-	<b>211.39</b>
James	6	785.50	10.30	-	-	<b>795.80</b>
Potomac	2	1,121.26	-	-	-	<b>1,121.26</b>
Rappahannock	3	1,137.93	98.58	-	-	<b>1,236.51</b>
York	2	328.82	-	-	-	<b>328.82</b>
<b>Total:</b>	<b>18</b>	<b>5,156.06</b>	<b>108.88</b>	<b>0</b>	<b>0</b>	<b>5,264.94</b>

### b) DCR - Division of Natural Heritage

This report lists projects and activities conducted by the Department of Conservation and Recreation, Division of Natural Heritage (DCR-NH) during this period that were not funded by or otherwise reported to the VCZMP.

#### Inventory

##### *New Bee Species Documented in Virginia – 1/9/17*

During the 2016 field season, Natural Heritage zoologists continued extensive sampling of bees to better understand their diversity and distribution in Virginia. Sampling effort was widely distributed across the state and produced more than 2,500 specimens. With the help of Sam Droege from the USGS- Bee Lab in Laurel, Maryland, it was determined that six bee species DNH collected had never before been encountered in Virginia. Sampling in the mountains and valleys produced one state record from Augusta Co. (*Pseudopanurgus solidaginus*), one from Grayson Co. (*Lasioglossum perpunctatum*) and two from Pulaski Co. (*Melissodes tepaneca* and *Pseudopanurgus labrosiformis*).

Heavy emphasis was placed on collecting bees from the sandhills of the southeastern Coastal Plain which possesses good bee diversity and have been poorly sampled to date. Also, this region has benefited from strategic land conservation and stewardship by the Natural Heritage Program and its partners. Several rarely captured species were collected in this habitat along with two new state records, both from Chub Sandhill Natural Area Preserve (Sussex Co.), *Lasioglossum floridanum* and *L. raleighensis*. If funding can be secured, efforts to further understand bees in Virginia will continue in 2017.



*Melissodes tepaneca* by Sam Droege

#### *Natural Heritage Resources identified by RareQuest Volunteers – 1/16 - 12/16*

In 2016, the Department of Conservation and Recreation’s (DCR) Natural Heritage biologists initiated a project called RareQuest. This project used Virginia Master Naturalist volunteers to monitor the health of documented rare species populations throughout the Commonwealth.

The RareQuest project resulted in 81 volunteers contributing more than 770 hours; more than \$20,000 of service based on the current value of a volunteer hour in Virginia as measured by IndependentSector.org, the industry standard.

Teams of volunteers contacted landowners for property access permission and successfully found and documented 27 of the 134 rare species occurrences assigned to them. They also found one additional occurrence of a rare tree, previously known from only one other site in Virginia. In some instances when they were not successful in locating a rare species population, they were able to document habitat changes to explain why a rare plant no longer occurs in that area.

In addition to providing crucial data updates, this program helped strengthen the partnership between the DCR Natural Heritage Program and the Virginia Master Naturalist program. A survey was conducted with Master Naturalist volunteers prior to the training sessions, immediately following the training sessions, and following the field work (approximately 1 year after the training). The volunteers reported increases in their knowledge of the Natural Heritage mission and the purpose and process of monitoring rare species occurrences. Also, after training and before the field work was conducted, just 15% of volunteers indicated that “supporting efforts of VDCR’s Natural Heritage Program” was their primary motivation for participating in RareQuest. This percentage jumped to 43% in the post-field season survey.





Master Naturalist volunteers participating in RareQuest observed the globally-rare and state listed threatened Millboro leatherflower (*Clematis viticaulis*) at one site for the first time in 25 years.



DCR Botanist Johnny Townsend inspects a branch of the state-rare Pond Cypress, newly discovered by Master Naturalist volunteers in Southampton County, Virginia.

#### *Bull Run Bat Survey Submitted – 02/21/17*

After a successful 2016 bat survey season at Bull Run Mountain Natural Area Preserve in Fauquier and Prince William Counties, the final report was submitted summarizing the results of the acoustic and mist net surveys. Four species were confirmed by mist net captures, including a single Northern long-eared bat (*Myotis septentrionalis*), a species recently listed as federally threatened, and one of the bats impacted heavily by White Nose Syndrome. Other species captured included Big brown bat

(*Eptesicus fuscus*), Eastern red bat (*Lasiurus borealis*), and Evening bat (*Nycticeius humeralis*). Acoustic surveys added three more species as likely residents of the preserve, including Silver-haired bat (*Lasionycteris noctivagans*), Hoary bat (*Lasiurus cinereus*), and the state endangered Tri-colored bat (*Perimyotis subflavus*).



Northern long-eared bat (*Myotis septentrionalis*) captured in August 2016 near High Point at Bull Run Mountain Natural Area Preserve

#### *Big year for biological inventory – 02/24/17*

In 2016, biologists from the inventory staff of Virginia Natural Heritage conducted over 400 site visits and recorded data on 530 occurrences of Natural Heritage Resources (rare species and significant natural communities). This is the most by far in the last 15 years and it resulted in laying eyes on greater than 5% of all the Natural Heritage Resource occurrence known from Virginia! For the Natural Heritage inventory staff, this schedule demands long hours on the road and nights away from home, but we need these devoted, keen-eyed biologists to find some of our most enigmatic natural communities and rare species.



Natural Heritage biologists in the field.

#### *Crow's Nest Natural Area Preserve mapped by Heritage Inventory Staff –3/20/17*

Natural Heritage ecologists completed a vegetation inventory and map for the Crow's Nest Natural Area Preserve, which is detailed in Natural Heritage Technical Report 17-06 – Ecological Communities of Crow's Nest Natural Area Preserve, Vegetation Classification and Map. The preserve includes a notable variety of habitat types, including tidal and non-tidal wetlands, over 2000 acres of mature hardwood forest, 11 miles of shoreline, and over 15 miles of streams. The vegetation map was based on field data collected over many years, beginning back in 1999. The vegetation map classes correspond with the Community Type classification defined by Virginia Natural Heritage Ecologists in the Natural Communities of Virginia (<http://www.dcr.virginia.gov/natural-heritage/natural-communities/>) and is also cross-walked to the U.S.



National Vegetation Classification standard. The report and associated products will be used to inform future biological management and public access development at Crow's Nest NAP.

## Prescribed Burning

### *Prescribed Burn Completed at Antioch Pines Natural Area Preserve – 11/17/16*

DCR Natural Heritage staff conducted prescribed fire operations at Antioch Pines Natural Area Preserve in Isle of Wight County. Assisting were partners from the Department of Game and Inland Fisheries and Department of Forestry. This burn was completed in order to create favorable conditions for under-planting native Virginia longleaf pine seedlings. Planting of over 100,000 longleaf seedlings at both Antioch Pines and South Quay Sandhills NAPs is planned for December 2016.

### *Prescribed Burn in 10-year-old Longleaf at Chub Sandhill Natural Area Preserve – 3/6/17*

An interagency fire crew made up of staff from DCR, DOF, DGIF and TNC burned a 107-acre longleaf pine restoration site at Chub Sandhill NAP in Sussex County. This is DCR's oldest longleaf pine restoration project, with seedlings established in 2007 and prescribed fire applied every two years since 2009. Conditions were perfect for burning on this day, and the interagency partners were able to conduct two other longleaf pine restoration burns on March 6 – one at Great Dismal Swamp NWR and one on private land in Isle of Wight County.



On March 6, 2017, prescribed fire was applied for the fourth time in a 10-year-old longleaf pine restoration area at DCR's Chub Sandhill Natural Area Preserve in Sussex County.

*Prescribed Burning Assistance to Southeast Fire Partners – 3/23/17*

DCR Natural Heritage and State Parks staff assisted the U.S. Fish and Wildlife Service (USF&WS) with a 100-acre burn at Back Bay National Wildlife Refuge (NWR), conducted to enhance waterfowl food sources and maintain habitat. On the same day, other DCR staff assisted the Department of Game and Inland Fisheries (DGIF) with a 172-acre burn at Big Woods Wildlife Management Area (WMA). This burn reduced hardwood mid-story growth and reduced fuels adjacent to another burn unit planned for prescribed burning later this spring. On March 24, DCR staff assisted the Department of Forestry (DOF) with a burn at Big Woods State Forest. Similar to the WMA burn, this burn accomplished forest resource objectives and controlled fuels adjacent to another unit planned for future burning. The DCR, DGIF, FWS, DOF and The Nature Conservancy staff, plus AmeriCorps volunteers, assisted with all three of these burns.



AmeriCorps volunteers provide assistance on a prescribed burn at Big Woods Wildlife Management Area.



Interagency burn crew assisted Department of Forestry on a prescribed burn at Big Woods State Forest.

**Natural Area Preserve Stewardship**

*Heritage Stewardship staff meet with Willcox Watershed Conservancy – 11/7/16*

The Natural Heritage Longleaf Pine Restoration Specialist and the Chesapeake Bay Region Steward met with members of the Willcox Watershed Conservancy at Lee Memorial Park to discuss management techniques for promoting rare plant populations as well as habitat restoration in areas that likely contained rare, sun-loving species but are now overgrown and shaded. Conservancy members were advised on the use of a variety of vegetation management techniques including mechanical removal, selective herbicides, and prescribed fire. Lee



Memorial Park is home to one of Virginia's two known populations of the rare fire-dependent orchid Eaton's ladies'-tresses (*Spiranthes eatonii*) but is now being actively managed for with infrequent mowing to maintain its preferred open habitat.



Eaton's ladies'-tresses orchid (*Spiranthes eatonii*)

#### *Natural Heritage participates in Heron Census – 12/20/16*

Stewardship and Protection staff of the Natural Heritage Program joined employees of Stafford County and staff and Board members of the Northern Virginia Conservation Trust (NVCT) on a heron nest census along Potomac Creek. Participants counted 226 Great Blue Heron nests, down from 259 the previous year. In addition to supporting the heronry, this important property adjoins the Crow's Nest Natural Area Preserve. The land trust and DCR's Natural Heritage Program are working together to dedicate this 70-acre NVCT-owned parcel as an addition to the Crow's Nest Natural Area Preserve, to provide maximum protection for the tract and continue to grow this on-the-ground stewardship partnership.



Potomac Creek heron survey volunteers



Heron nests in Sycamore trees



Kathy Baker of Stafford County leads a group in counting a heron nest cluster

*Longleaf Pine Planting at Antioch Pines Natural Area Preserve – 12/30/16*

On December 30, DCR's Natural Heritage Longleaf Pine Restoration Specialist and Chesapeake Bay Region Steward oversaw operations to underplant 48,634 native Virginia longleaf pine seedlings on approximately 120 acres at Antioch Pines Natural Area Preserve in Isle of Wight County. DCR's tree-planting contractor provided a large and efficient crew to complete the project in a single day. All seedlings were planted within two recently burned management units at APNAP beneath an old-age, open, predominantly loblolly pine canopy that had been burned repeatedly by DCR staff over the previous 20 years. Under DCR's on-going prescribed fire management regime, many of these seedlings will develop into saplings; then, reach intermediate canopy positions; and finally, will replace the existing loblolly pine overstory as it succumbs in stages to mortality factors including lightning strikes, windthrows, ice storms and insect outbreaks. This is the first of two planting projects planned for winter 2016-17 on Southeast Region natural area preserves. The other, at South Quay Sandhills NAP, is planned for January pending completion of a site preparation prescribed burn.





Rock Springs Forestry completed a 120-acre contracted longleaf pine underplanting project at Antioch Pines Natural Area Preserve in Isle of Wight County in December 2016.

#### *Longleaf Pine Restoration at South Quay Sandhills Natural Area Preserve – 2/8/17 and 2/16/17*

In February 2017, DCR's Natural Heritage staff completed this winter's longleaf pine restoration objectives on Southeast Region state natural area preserves by establishing thousands of native longleaf seedlings at South Quay Sandhills Natural Area Preserve in Suffolk. On February 8, an interagency prescribed fire crew (DCR, DGIF, USFWS) led by DCR's Longleaf Pine Restoration Specialist completed site preparation burning on approximately 100 acres in order to clear woody debris and control competition prior to planting. On February 16, DCR's contracted tree-planting crew planted over 16,000 seedlings on approximately 30 acres. In conjunction with a 120-acre planting project completed at Antioch Pines Natural Area Preserve in December 2016, this brings DCR's total longleaf pine restoration accomplishments for the 2016-17 planting season to 150 acres. Total longleaf pine restoration on state natural area preserves is now at 1,200 acres established since work began 10 years ago in 2007.



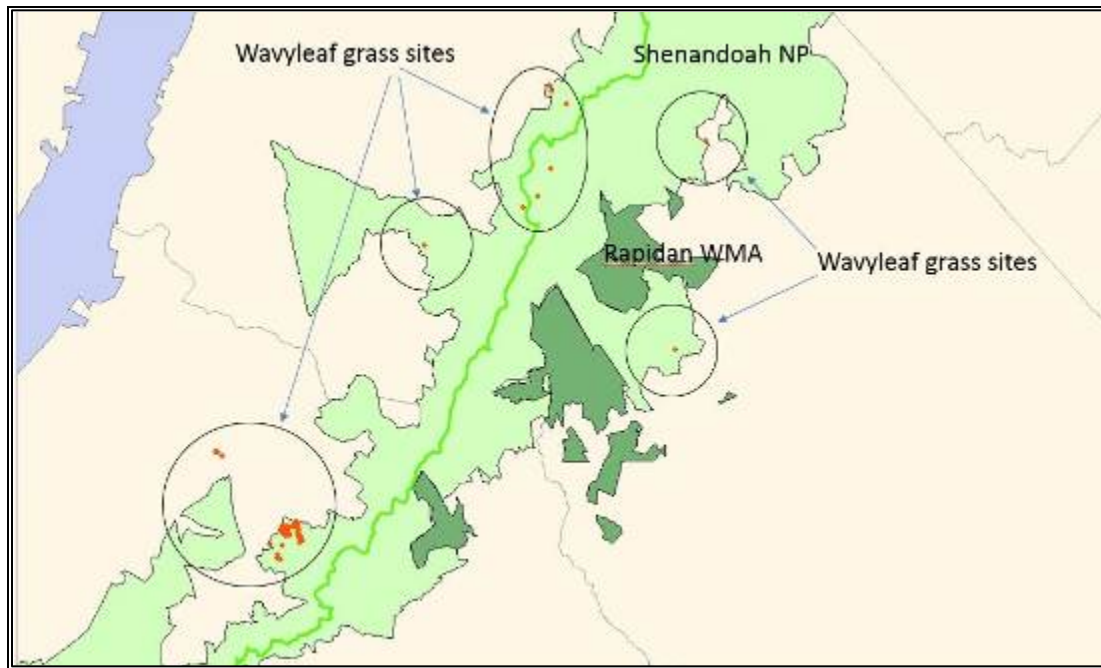
Following a February 8 site prep prescribed burn, DCR's longleaf pine planting contractor completed work at South Quay Sandhills Natural Area Preserve on February 16, 2017.

## Invasive Species

### *Presentation to DGIF Staff on Wavyleaf Grass – 1/5/17*

DCR's Natural Heritage Stewardship Biologist gave a presentation on the invasive plant, wavyleaf grass (*Oplismenus undulatifolius*), to Department of Game and Inland Fisheries (DGIF) Wildlife Bureau staff with representatives from each of DGIF's four regions in attendance. The presentation addressed the threats posed by wavyleaf grass to Virginia's forests and native wildlife. Wavyleaf grass is a recently introduced invasive plant that outcompetes and replaces native forest ground cover including tree seedlings, and alters or destroys the habitat of native wildlife species. Wavyleaf grass has been found near several state Wildlife Management Areas (WMAs) in northern Virginia. Following the presentation, discussion included ways DCR might assist DGIF staff to better recognize and manage invasive plant and insect species, possibly through training workshops and jointly conducted field surveys.





Wavyleaf grass invasion sites within Shenandoah National Park near the Rapidan WMA in Virginia.

#### *Natural Heritage Staff Conducts Groundbreaking Invasive Species Meeting – 1/5/17*

DCR Natural Heritage Stewardship Biologist facilitated the first Wavyleaf Grass Technical Committee Meeting. Gathering experts with direct experience of wavyleaf biology, ecology, and management for the purpose of developing consensus recommendations for best practices in managing wavyleaf grass. The participants included Dr. Vanessa Beauchamp (Towson University), Kerrie Kyde (Maryland DNR), Mark Frey (National Park Service-Exotic Plant Management Team), Erin Stockschrader (Fairfax Co. Parks and Recreation), Kyle Rhodes (Smithsonian Conservation Biology Institute), Lori Chamberlin (DOF), Anna Griesse (USFS) and Jim Hurley (Blue Ridge PRISM). Discussion included methods for mapping and reporting occurrences, chemical treatment methods and timing of treatments, and potential sources of funding for control projects. A best practices fact sheet will be published before wavyleaf begins sprouting in 2017.

#### *National Invasive Species Awareness Week and Website Update – 2/27/17 to 3/3/17*

In support of *National Invasive Species Awareness Week* DCR's Natural Heritage and Public Communications Office (PCO) staff launched an updated and revised Virginia Invasive Species website. The site provides an introduction to invasive species issues and links to the best resources on the web. Visitors can also find guidance on how to map and report invasive species occurrences using online mapping tools, a web form, or a telephone. All this and more can be found at [www.vainvasivespecies.org](http://www.vainvasivespecies.org). DCR PCO staff also promoted the site and the *Awareness Week* with a series of terrific Facebook posts on wavyleaf grass, feral hogs, Japanese stiltgrass, and emerald ash borer.



Recently updated DCR Virginia Invasive Species website home page.

## Outreach and Education

### *Eastern Shore Birding – 10/21/16*

Six Eastern Shore Natural Area Preserves (NAPs) were among the field trip venues for the Eastern Shore Birding & Wildlife Festival. They included Savage Neck Dunes NAP, Cape Charles NAP, Pickett's Harbor NAP, Magothy Bay NAP, Mutton Hunk Fen NAP and Wreck Island NAP. The field trips were led by the Natural Heritage Eastern Shore Region Steward, the Coastal Operations Steward, the Natural Heritage Field Zoologist, and members of the Virginia Master Naturalists Eastern Shore Chapter. The annual festival celebrates the autumn songbird, shorebird and raptor migration along the Delmarva peninsula.



Savage Neck Dunes NAP



*VA Master Naturalists Eastern Shore Chapter 2016 Training Courses – 10/21/16*

Three Eastern Shore Natural Area Preserves (NAP) served as outdoor classrooms for the Virginia Master Naturalists Eastern Shore Chapter 2016 training course. The Eastern Shore Region Steward, the Coastal Operations Steward and the Natural Areas zoologist led sections on field botany, natural communities, and field zoology at Savage Neck Dunes NAP. Mutton Hunk Fen NAP served as the site for sections on coastal geology, led by geologist Dr. Ed Hopkins, and invasive species, led by the DNH Stewardship Biologist. The sections on coastal processes and sea grass restoration were held at the University of Virginia (UVA) Anheuser-Busch Coastal Research Station, followed by a field trip to Wreck Island NAP. Eastern Shore Region staff provided transportation to the island. The Eastern Shore Region Steward, Dr. Ray Dueser (Professor Emeritus UVA) and Dr. Art Schwarzschild (Director Anheuser-Busch Coastal Research Station) combined talents and knowledge while on the island. This is the 10<sup>th</sup> year of the VA Master Naturalist Program on the Eastern Shore. The use of natural area preserves as outdoor classrooms has helped increase the awareness of the Natural Heritage Program mission and the importance of securing and managing Natural Area Preserves throughout the community of Virginia's eastern shore.



Virginia Master Naturalist Eastern Shore Chapter training class listens as Dr. Ray Dueser explains barrier island dynamics.

*VCU Students Tour Eastern Shore NAPs – 10/21/16*

Students from the Virginia Commonwealth University Applied Ecological Restoration course visited Eastern Shore Region Natural Area Preserves to learn about migratory songbird habitat restoration practices. The Eastern Shore Region Steward and the Coastal Operations Steward led the students on a tour of restoration projects initiated by DNH at Mutton Hunk Fen NAP, Savage Neck Dunes NAP and Pickett's Harbor NAP. Over 500 acres of natural area preserve lands are undergoing restoration on the Eastern Shore. The students learned about ecological theory, methodology, successes and challenges involved in the restoration.



VCU Students on the Eastern Shore

*Natural Heritage 30<sup>th</sup> Anniversary Public Hikes – 10/22/16 – 10/23/16*

On the weekend of October 22-23, 2016 DCR's Natural Heritage Program celebrated its 30<sup>th</sup> Anniversary (1986 - 2016) by hosting seven events for the general public at state natural area preserves across the state. These guided hikes were planned, promoted and hosted with the goal of making the mission of Natural Heritage more widely known and to increase awareness and appreciation for Virginia's natural area preserves (NAPs) and the remarkable biodiversity protected by this special system of state lands. A total of 86 persons attended the seven events on a nice (but windy) fall weekend. Trips included a paddling trip through Tidal Freshwater Marsh at Crow's Nest NAP in Stafford County. Public hikes were also conducted at two other coastal preserves: Hughlett Point (Northumberland County), and Savage Neck Dunes (Northampton County).

*Healthy Waters Program Presentation Opportunity – 10/28/16*

The Healthy Waters Program Manager has been invited by the US EPA to present at the 2016 National Nonpoint Source Training Workshop in Boston, MA on the newly approved *Criteria for Ecologically Healthy Watershed Conservation*. This unique criteria outlines an approach to conserve ecologically healthy resources following a step-by-step approach similar to the US EPA TMDL process for watershed restoration. The Program Manager will share a panel with representatives from the State of Maine and the Nature Conservancy.

*Project Review Staff Attend Conference at Virginia Tech – 10/27/16 – 10/28/16*

The Natural Heritage Project Review Coordinator attended the Women in Natural Resources Conference held at Virginia Tech. Highlights of the conference included participation in the Unmanned Aerial System Demonstration at Kentland Farm by the Conservation Management Institute and a keynote presentation by the president and CEO of the Sustainable Forestry Initiative (SFI). The SFI forest certification program requires participants to support research such as longleaf pine ecosystem restoration through planting and prescribed fire. 210 participants attended the conference including staff from VDGIF, DOF, VOF, USFS, USFWS and other DCR partners.



Women in Natural Resources Conference



Unmanned Aerial System demonstration at Kentlands Farm

### *Natural Heritage 30<sup>th</sup> Anniversary Public Hikes – 10/22/16 – 10/23/16*

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Participants enjoy a hike at Goshen Pass Natural Area Preserve as part of the Natural Heritage Program's 30<sup>th</sup> Anniversary Celebration.

*Staff Attend Longleaf Conference in Savannah, Georgia – 11/1/16 – 11/4/16*

From November 1 - 4, the DCR Natural Heritage Longleaf Pine Restoration Specialist and Southeast Region Steward attended the 2016 Biennial Longleaf Conference sponsored by The Longleaf Alliance. This regional conference focuses on restoration and conservation of the Longleaf Pine ecosystem that once dominated much of the southeastern Coastal Plain from Virginia to Texas. The 11th biennial conference theme was "A Working Forest for the Long Run" and featured numerous presentations on partnerships, communication tools, fire management, mapping and monitoring. Field tours featured longleaf restoration projects at Townsend Wildlife Management Area and Fort Stewart. DCR staff gave a poster presentation entitled "*Longleaf Pine Restoration Efforts in Virginia*". The Southeast Region Steward was also second author for a poster entitled "*Restoration and Maintenance of the Northernmost Longleaf Pine Community, Blackwater Ecological Preserve, Isle of Wight County, Virginia*" presented by graduate students at Old Dominion University. Jerre Creighton, Research Program Director for the Virginia Department of Forestry, received the Longleaf Alliance's Bill Boyer Natural Resource Professional of the Year award for his efforts with native Virginia longleaf pine restoration. Jerre was nominated for this award by DCR Natural Heritage staff.



Poster presented by DCR staff and field trip participants at the 11<sup>th</sup> Biennial Longleaf Conference in Savannah, Georgia in early November 2016.

*Presentation to Virginia Tech Department of Entomology – 11/3/16*

A Natural Heritage Staff Zoologist was the invited speaker at the weekly seminar of the Department of Entomology at Virginia Tech on November 3. His presentation to about 30 faculty, staff, and students was entitled "Assessment and Conservation Status of Virginia's Native Insect Fauna." Following an introduction to the Department of Conservation and Recreation, particularly the Division of Natural



Heritage, the talk focused on discussing the results of field surveys and museum research conducted during the past quarter century that has been directed toward determining the composition, distribution, and conservation status of Virginia's native insect fauna. The work of the Division of Natural Heritage with several groups of insects, particularly butterflies, moths, dragonflies, damselflies, and bees, was highlighted. The following day the Staff Zoologist studied the insect collection at Virginia Tech to obtain data on various species

*Fall Interagency Fire Refresher at Pocahontas State Park – 11/9/16*

DCR staff hosted the annual Interagency Fire Refresher at Pocahontas State Park. Twenty-three DCR staff joined an additional 22 wildland firefighters from partner agencies and organizations including the Department of Game and Inland Fisheries, Department of Forestry, U.S. Fish & Wildlife Service and The Nature Conservancy. This annual training includes completing a mandatory physical fitness test and emergency fire shelter deployment exercise, plus review of the 10 Standard Firefighting Orders and 18 Watchout Situations. Attendees also received training in Utility Task Vehicle (UTV) operations, pre-burn preparation and sizing-up spot fires. While mandatory for maintaining fire crew qualifications to conduct prescribed burns, annual Fire Refreshers are also an excellent opportunity for prescribed fire practitioners from across the state to meet each other, discuss successes and learning opportunities from the previous year, and plan collaborations for the future.

*Presentations at VCU Society for Ecological Restoration Conference – 11/12/16*

DCR Natural Heritage staff participated in a conference sponsored by the student chapter of the Society for Ecological Restoration (SER) at VCU. The conference was held at the VCU Rice Rivers Center in Charles City County. Dot Field, Eastern Shore Region Steward, delivered the keynote address which focused on ecological parameters of successful restoration projects. Natural Heritage migratory songbird habitat restoration projects on state natural area preserves located on the Eastern Shore were used to illustrate the restoration planning and implementation process. Darren Loomis, Southeast Region Steward, was also a featured speaker and presented an overview of DCR's longleaf pine restoration efforts. In addition to the morning plenary sessions, NH staff collaborated to lead an afternoon workshop session on soils and planting techniques. Approximately 65 students attended with many expressing enthusiasm and interest for ecological restoration.

*Presentation to Virginia Native Plant Society on Mosses and Liverworts – 1/12/17*

The Division of Natural Heritage Staff Botanist gave a presentation to the Pocahontas Chapter of the Virginia Native Plant Society entitled "Discovering Mosses and Liverworts, The Unsung Flora of Virginia." This presentation explored the diversity, complexity, and beauty of this poorly known plant group (collectively known as bryophytes), focusing heavily on Virginia species. Recent field work in Virginia was discussed, including rare species inventories done by Natural Heritage. Examples from the field and through the microscope were used to illustrate the diversity of forms to be found in this ancient group of plants and the techniques used to identify them.



Botanists studying bryophytes in Washington County, Virginia



A Liverwort from the Great Dismal Swamp (left) and Mosses at the Cedars Natural Area Preserve (right)

#### *Natural Area Preserve Presentation at Old Dominion University Biology Seminar – 1/20/17*

The DCR Natural Heritage Stewardship Manager gave an invited presentation to the ODU Biology Department weekly seminar for students and faculty. The talk, titled “*Natural Community and Rare Species Habitat Restoration on Virginia’s State Natural Area Preserves*” provided an overview of DCR’s regional approach for managing the system’s current 63 preserves and 56,000 acres of protected lands. Details were provided about five examples of habitat restoration projects currently underway: restoring longleaf pine communities in southeast Virginia, migratory songbird habitat restoration on the Eastern Shore, Piedmont prairie and woodland restoration underway at Difficult Creek NAP in Halifax County, Shenandoah Valley wet prairie/grassland restoration at Cowbane Prairie NAP in Augusta County, and barrens/glade restoration at Big Spring Bog NAP in Grayson County and The Cedars NAP in Lee County.

#### *Natural Heritage Staff Give Presentations on Forest Health in Virginia – 1/30/17*

Two DCR staff presented at the Virginia Association of Forest Health Professionals Conference in Richmond. The DCR Longleaf Pine Restoration Specialist gave a talk about longleaf pine history in Virginia and the Southeast, fire ecology, the importance of "Northern source" longleaf seedlings, and the multi-partner restoration project, which has resulted in thousands of longleaf seedlings planted on hundreds of acres of protected lands. The DCR Stewardship Biologist presented the latest information on the wavyleaf grass (*Oplismenus undulatifolius*) invasion, the threats to native forests, key characters for identifying it, mapping and reporting tools, and best practices for control. With over 200 participants, the 2017 VFHPA conference enjoyed the largest attendance in its history.

*Heritage Staff Attend Interagency Fire Partnership Meeting – 2/3/17*

DCR-DNH stewardship staff attended a meeting of eastern Virginia's Interagency Fire Partnership. Representatives from the U.S. Fish and Wildlife Service, Virginia Department of Conservation and Recreation – Division of Natural Heritage, Virginia Department of Game and Inland Fisheries, Virginia Department of Forestry, and The Nature Conservancy used this opportunity to plan for the 2017 burn season by prioritizing prescribed fire needs, discussing training, and identifying opportunities to share resources and expertise. Large-scale prescribed fire operations require staffing and equipment beyond the means of the majority of individual Partnership organizations, so continued cooperation is essential to meeting prescribed fire goals, including DCR-DNH's goal of longleaf pine restoration on state natural area preserves in southeast Virginia.

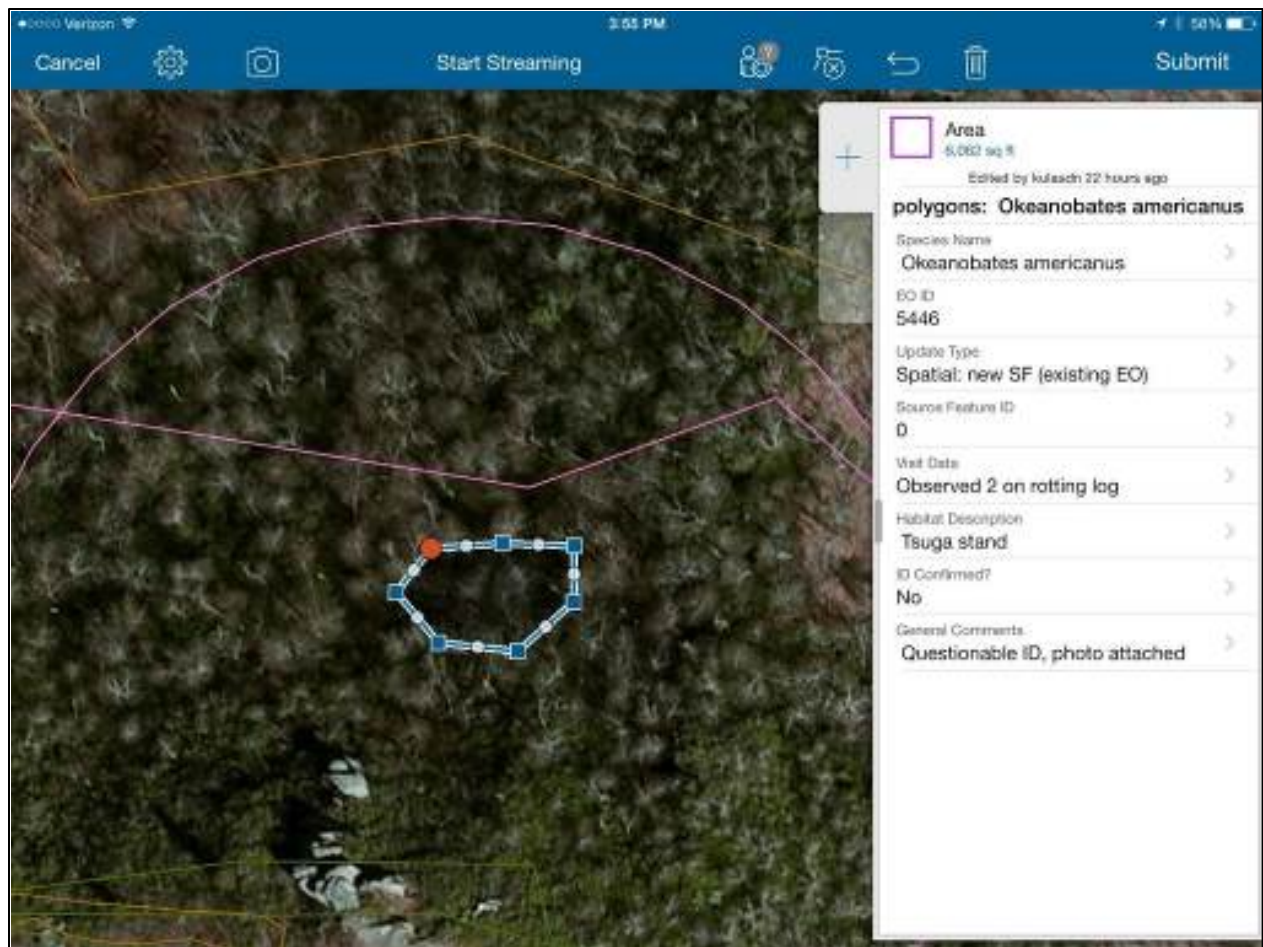


Prescribed fire at Blackwater Ecological Preserve in Isle of Wight County

*Mobile Data Collection Presentation to Southeast Natural Heritage Programs – 2/9/17*

The Natural Heritage Data and GIS Specialist gave a presentation via GoToMeeting on the Virginia Natural Heritage Program's use of mobile data collection technology through ArcGIS Online and the Collector App. In attendance were members of several Natural Heritage Programs from the Southeastern US, as well as NatureServe staff. Virginia Natural Heritage's EO Easy project for Natural Areas Stewards was outlined, as well as Inventory biologist use of Collector to supplement field surveys. Also discussed was the successful 2016 RareQuest initiative, a citizen science partnership with Virginia Master Naturalist volunteers to survey for occurrences of rare species that haven't been seen in over 20 years. The Data and GIS Specialist also spoke of a new project working with US Forest Service biologists to record Natural Heritage rare species and natural community data on Forest Service property in Virginia, first with ArcGIS Online and potentially expanding to the Collector App. The benefits of utilizing mobile data collection were reviewed, which include efficient methodology for collecting data in the field, gaining sources of data where there were previous gaps or lack of consistent updating, easily manipulated data that is stored in one place once gathered, and strengthened partnerships with other agencies and volunteer organizations. Conference call attendees asked thoughtful and relevant questions, and ideas on how to apply mobile data collection services to facilitate collaboration across the greater NatureServe Network were discussed.





The Collector app as it appears on a mobile device

#### *Heritage biologist presents at Virginia Native Plant Society's Annual Workshop – 3/4/17*

The DCR-Natural Heritage Staff Botanist delivered a presentation to the Virginia Native Plant Society's winter workshop at the University of Richmond entitled "Discovering Botany Anew: The World of Bryophytes". This talk explored the diversity and unique qualities of the mosses and liverworts of Virginia, including recent discoveries of rare species and a discussion of their habitats. The workshop, which also featured experts in lichenology and mycology, highlighted lesser known or under-appreciated organisms and the role they play in our natural communities. Between 150 and 200 members were in attendance.



Bryophytes observed in Dan River Gorge, Virginia



*Natural Heritage Program presentation to Northern Neck Audubon Society – 3/6/17*

DCR's Chesapeake Bay Region Steward gave a presentation to the Northern Neck Chapter of the National Audubon Society (NNAS). Entitled "Your Virginia Natural Heritage Program," the presentation introduced the 44 attendees to the history and structure of DCR's Natural Heritage Natural Area Preserves (NAPs) and associated stewardship activities across the state, and culminated with a more in-depth look at the four NAPs on the Northern Neck. In addition to providing valuable support during the purchase of the three DCR-owned NAPs on the Northern Neck (Bush Mill Stream NAP, Dameron Marsh NAP, Hughlett Point NAP), the NNAS owns Hickory Hollow NAP, an important stopover for migratory songbirds that also protects several rare orchid species and a globally rare basic seepage swamp community.

*RareQuest Collector App refresher webinar – 3/7/17*

The Natural Heritage Data and GIS Specialist gave a 1.5 hour refresher webinar to Virginia Master Naturalist volunteers involved in the RareQuest project. RareQuest is a citizen science partnership between DCR's Natural Heritage Program and the Virginia Master Naturalist Program, where volunteers are trained on species identification, landowner communication, survey techniques, and use of the Collector App to record survey information. RareQuest volunteers focus on visiting rare plant and animal sites that have not been seen in over 25 years, and submitting their findings along with pictures using the smartphone Collector App. The well-attended webinar included hands-on demonstrations, review and provision of supplementary help documents and the webinar was recorded for volunteers to refer back as needed. This DCR-VMN partnership was a success in 2016 and everyone involved is looking forward to the upcoming 2017 field season. RareQuest provides valuable field experience for Master Naturalist volunteers, and much needed assistance to the Natural Heritage Program when the limited Natural Heritage Inventory staff are unable to sufficiently assess current species trends and site status.

Please take a moment to view this video, which chronicles the 2016 RareQuest Project:

<https://vimeo.com/195854299>

*Natural Heritage Represented at Virginia Coast Avian Partnership Meeting – 3/8/17*

On March 8, DCR's Eastern Shore Region Steward attended the annual meeting of the Virginia Coast Avian Partnership (VCAP), held at the Eastern Shore Community College in Melfa, Virginia. VCAP was established as a forum for sharing research updates and conservation initiatives related to shorebirds and other migratory

birds that utilize the Virginia coast for breeding and stopover habitat. This year's meeting focused on how climate change may affect avian population dynamics. Attendees shared their organization's respective policies, philosophies and actions regarding climate change, with the Eastern Shore Region Steward presenting the perspective of DCR's Natural Heritage Program. Break-out groups were established to identify knowledge and management gaps, as well as potential areas of collaboration. Participants received training in the use of the Coastal Resilience Tool, an on-line mapping application that looks at potential sea-level rise effects. Representatives from the U.S. Fish and Wildlife Service, The Nature Conservancy, DGIF, VIMS, USGS, Virginia Tech and Old Dominion University also attended.

*Inventory staff attend Mollusk Recovery conference – 3/9/17*

DCR Natural Heritage Staff Zoologist and a Field Zoologist attended the annual meeting of the Virginia Atlantic Slope Mollusk Recovery Group at the VDGIF Region 1 office in Charles City. The 21 attendees (some via conference call from as far away as Ohio and New Hampshire) included representatives from state (VDCR, VDGIF) and federal agencies (US Fish & Wildlife Service, US Forest Service), private consulting firms, and nonprofit organizations, as well as academia. Topics discussed included recent field surveys for endangered and threatened freshwater mussels in Virginia, population assessments, mussel taxonomy and genetics, laboratory propagation, environmental impact studies, and other issues relevant to the conservation of freshwater mussels inhabiting the Atlantic Slope drainages of Virginia. The Staff Zoologist and Field Zoologist gave brief presentations on recent field work conducted by Natural Heritage staff on the federally endangered James Spiny mussel.

*Heritage Staff Instructs Master Naturalists on Invasive Species Identification – 3/21/17*

DCR's Stewardship Biologist presented a three-hour invasive species workshop for the 2017 Pocahontas Master Naturalist trainees. The workshop took place at Pocahontas State Park, with 26 new trainees in attendance. Topics included how invasive species are defined, threats posed, case histories, and how to map and report invasive species using online and mobile tools. Special focus was given to wavyleaf grass identification. Wavyleaf grass is a relatively new and especially aggressive invasive species in Virginia, with anticipated potential to drastically change the structure, species composition and habitat value of forests throughout the Commonwealth.

*Natural Heritage Staff Conducts College Outreach – 3/22/17*

DCR's Chesapeake Bay Region Steward presented at the 13<sup>th</sup> annual J. Sargeant Reynolds Community College Science Night. The event showcased local educators, scientists, and organizations that provided a wide variety of hands-on demonstrations for attendees. The Chesapeake Bay Region Steward introduced DCR's cooperative longleaf pine restoration efforts and illustrated fire adaptations, the importance of the longleaf pine ecosystem to numerous other plants and animals, and some basics of prescribed fire. Later, in a follow-up thank you email from the faculty, one attendee was quoted as saying "I also enjoyed learning about the longleaf trees, I did not know that there are trees that thrive on fire."



Zach Bradford, Chesapeake Bay Region Steward, speaks with a student at J. Sarge.

*Heritage staff Volunteer to Remove Invasive Ivy in James River Park System – 3/22/17*

On March 22, eight volunteers from DCR-Division of Natural Heritage participated in an invasive species removal project in the James River Park System. With coordination from the DCR Natural Areas Protection Manager and the volunteer coordinator at the James River Park System, the volunteers selected a particularly overgrown area near the Reedy Creek trail and removed English ivy (*Hedera helix*) from approximately 40 trees.



Vines removed in a band from shoulder height down – all vine growth above the band will die out of the tree in time.



The Heritage team included (left to right) Tyler Meader, Karen Patterson, Anne Chazal, Barbara Gregory, Danielle Kulas, Rene Hypes, and Rob Evans (not pictured).





Rob Evans removes English Ivy vines from tree.

*Heritage Staff Presents at National Conference in Durham, NC – 3/28/17*

The DCR-Natural Heritage Species Modeling Project Manager delivered a presentation at the National Association of Environmental Professionals' annual conference in Durham, NC, on how species distribution models are used in environmental review, conservation planning, and for informing future inventory work. The talk was part of a larger panel discussion of how Natural Heritage programs and data can help support land use and conservation decisions. The session was attended by representatives from federal and state government conservation agencies, non-profit and for profit environmental groups, and graduate students from several universities.

Land Conservation

*Visitation to Potential Preserve Addition, Site of Champion Oak – 02/24/17*

The Natural Area Protection Specialist recently visited a 150-acre tract adjacent to Antioch Pines Natural Area Preserve in Isle of Wight County. The property, which has a high sandy upland suitable for longleaf pine restoration and extensive bottomland hardwood swamps, has long been considered a target for conservation and may now be available as an addition to the preserve. Scattered across the bottomland are several old trees, whose gnarly growth form and hollow trunks helped spare them from past logging operations. These trees are likely important roosts for several declining species of bats. One particularly large tree is the reigning national champion overcup oak.



The reigning national champion Overcup Oak located on the Payne Tract.

#### Natural Heritage Data Management Totals for FY2016:

Activity 10-01-16 – 03-31-17

New Mapped Locations (EOs) - 22  
Updated Mapped Locations (EOs) - 28  
New Conservation Sites – 11  
Updated Conservation Sites - 10

Total Number in Database 03-31-17:

Animal Mapped Locations (EOs) – 610  
Plant Mapped Locations (EOs) – 1196  
Community Mapped Locations – 544  
Conservation Sites – 564

Managed Areas: (Acres added 10-01-16 – 03-31-17) -2,875.32\_Acres  
Mapped Tracts: (total in coastal zone) – 21 Tracts  
Mapped Managed Areas: (total in coastal zone) - 21 Managed Areas

## DCR – Healthy Waters

For the grant reporting period, the Environmental Scientist/Analyst with the Virginia Commonwealth University, Center for Environmental Studies in the Department of Life Sciences continued to serve as the Program Manager of the Virginia Healthy Waters Program at the Virginia Department of Conservation and Recreation, Division of Natural Heritage.

The Healthy Waters Program is supported through funding from several grant sources including the VA CZM Section 306, US EPA Section 319 Nonpoint Source Program, and the Chesapeake Bay Implementation Grant. These sources fund various aspects of the Program including the administration and oversight, Program growth and expansion, improvement in capacity, acquisition and analysis of new data and data integration.

Programmatically, the assessment of program resources and needs has continued to determine gaps and areas of improvement. Data integration, geographic expansion and data re-sampling continue to be the top focal areas of the analysis with immediate attention addressed to integrate existing INSTAR data into the DNH data explorer and the creation of new Ecological Occurrences (EOs) and Stream Conservation Units (SCUs). Challenges to administering the Program are development of new data to complete the statewide coverage, and the resource and staffing needs to conduct field assessments. The DNH continues to support the Healthy Waters Program by contributing one field biologist for the purpose of being trained in the INSTAR data collection and field identification process. For the upcoming sampling 2017 season, two Heritage staff will participate with the VCU field crew and will be supported with CZM funding. This increased capacity in the program is a critical advancement in the program within the Division of Natural Heritage and permits the collection of data by additional field personnel aside from specific grant related activities. This process provides the Healthy Waters Program the ability to identify and track trends in Healthy Waters.

While VDCR DNH has directed staff to include collecting data relevant to the HWP, the data will be in a raw form still requiring the development of models to interpret such information to make relevant to the Program, as a whole. The development of an INSTAR model is typically done on a basin scale to provide for comparable results within a defined area. The collection of raw data will permit an additional cataloging of resources to further inform the development of an INSTAR model when resources are present for the specific region or basin. The Watershed Integrity Model, used and developed by the Natural Heritage Division and VCU, has been updated and streamlined to improve the utility and integrate new data from the latest sampling. The new model is referred to as the ConservationVision Watershed Model. This new tool includes four primary components are: Watershed Integrity, Landscape Position, Soil Sensitivity, and Land Cover. A survey was distributed to stakeholders and potential users of the new model to obtain feedback on the changes and proposed weighting of various parameters.

The Program Manager continued to participate in the Chesapeake Bay Program Healthy Watershed Goal Implementation Team to coordinate the involvement of VA Departments of Conservation and Recreation, Environmental Quality and Forestry.

Through funding from EPA 319, the Program Manager continued to manage the process by which watersheds and waterbodies are identified as Healthy and how the Program communicates outward. The US EPA provided a final formal approval of the proposed nine-step criteria, paving the way for other similar projects in the Commonwealth. This nine-step criteria follows the same process for TMDL Watershed Implementation Plan development but focuses on the protection actions to ensure ecological health is maintained. The US EPA requested the Program Manager present the findings at the National Nonpoint Monitoring conference in Boston in November, 2016.

The VDCR DNH developed and submitted a proposal to the US Endowment of Forestry and Communities to support the Healthy Waters Program. The proposal sought funding to support the prioritization of ecologically

healthy sites in the Commonwealth and to fund a field position that would directly work in support of conservation and protection actions to ensure ecologically healthy aquatic conditions are maintained. This activity, if funded diverges from the typical work of the DNH and bridges the DNH Sections of Healthy Waters, Protection and Stewardship.

Additionally, during the reporting period, the Program Manager met with both the James River Association and the Friends of Rappahannock River to discuss how the INSTAR data and HWP might inform their protection actions in their respective regions. Ongoing discussions with the VDEQ about the development of a Biological Condition Gradient (BCG) have been underway with the intent of integrating the HWP with those outcomes of a BCG assessment process. The HWP also met with USEPA Region 3 Office to discuss better integrating HWP data into the Watershed Resources Registry (<http://watershedresourcesregistry.com/>). The HWP Manager met with the VA Department of Transportation to discuss using the HWP data to identify potential projects that would assist VDOT in meeting their MS4 obligations and nutrient and sediment reductions.

### **c) DCR – Division of Outdoor Recreation**

#### **Scenic Rivers**

James River State Scenic River Designation: In the last year, a portion of the James River located in Botetourt and Rockbridge counties had its Scenic River designation extended from 14 miles to 59 miles.

#### **State Trails**

In response to House Bill 1542 (2015), the Statewide Trails Advisory Committee continues to meet at least twice a year to address tasks assigned by the General Assembly. DCR's most recent report to House and Senate subcommittees was submitted in October, 2016.

DCR and the Statewide Trail Advisory Committee have partnered with Virginia's United Land Trusts to co-host a conference called [Virginia's Land Conservation and Greenways Conference](#), which will be offered April 25-27 in Williamsburg.

#### **National Trails**

DCR has entered into an agreement with the National Park Service to complete the following tasks:

- Conduct 18 scenic view evaluations along the Potomac Heritage National Scenic Trail (PHT)
- Integrate the PHT into the Virginia Outdoors Plan
- Develop 5 trip ideas for visitors visiting state parks or natural areas along the Trail, and develop a concept plan for integrating the Potomac Heritage Trail into recreational opportunities in western Loudoun County.

#### **Virginia Outdoors Plan**

#### **Summary of 2017 VOP meetings**

DCR – Virginia Outdoors Plan-Annual Regional Meetings – During fall 2016, twenty-two regional *Virginia Outdoors Plan* update meetings were hosted by DCR at [Virginia Planning District Commission offices](#).

These meetings engaged 373 planners, community leaders, planning district staff, outdoor recreation advocates and citizens in providing regional updates for the 2018 *Virginia Outdoors Plan*. At each meeting, a video was shown which highlights progress on implementation of the 2013 *Virginia Outdoors Plan* (VOP). These meetings offer opportunities for DCR outdoor recreation planners to learn about recreation and land conservation accomplishments and identify needs for the 2018 VOP. Each meeting concluded with staff asking for examples on the probable topics for the 2018 VOP, requesting volunteers to join Department of Health committees, and thanking attendees for their time, interest and support of outdoor recreation. Following the meeting, notes were shared with the planning regions for distribution to all invitees.

Following is a brief summary of the regional meetings in the coastal zone.

Northern Virginia Regional Commission (Region 8) -- On September 7, thirty-nine attended the meeting at the Commission's office in Fairfax. NOVA Regional Commission staff used this opportunity to gain input on two new outdoor recreation and tourism initiatives – Familiarity Tours for Fort Belvoir and Prince William and Loudoun Counties and a regional scenic inventory. Many of the featured projects in this region relate to trails with shared opportunities for outdoor recreation and transportation alternatives. [W&OD Trail](#) carrying capacity issues were mentioned. Funds are needed for regional planners to begin work on a regional public water access plan.

Richmond Regional Planning District Commission (Region 15) -- On October 6, thirty-two attended this meeting at the Commission's office in Richmond. Discussions centered progress made on recommendations from the 2013 VOP. Updates were provided from the City of Richmond, Town of Ashland, and Counties of Goochland, Hanover, Henrico and Chesterfield. Discussions included the success of the Virginia Capital Trail and the scheduled improvements to mountain bike trails at Pocahontas State Park and the region. It was recommended that a trail connection be made between Pocahontas and the James River Park System in the City of Richmond. The Virginia Department of Health reported on programs related to smoking cessation, healthy eating, complete streets and violence/injury prevention as it relates to parks and recreation programs.

George Washington Region Commission (Region 16) -- On October 13, seventeen attended the meeting at the Commission's office in Fredericksburg. Topics of discussion included the East Coast Greenway, The Dahlgren Heritage Trail, and land and water trails along the Potomac and Rappahannock Rivers. The City of Fredericksburg provided outdoor recreation updates, as did the Counties of Stafford, Spotsylvania and King George. The Virginia Department of Health provided information on making parks tobacco free.

Northern Neck Planning District (Region 17) -- On August 30, eighteen attended this meeting at the Planning District's office in Warsaw. Discussions centered around the ways outdoor recreation benefits the regional economy. Many of the specific projects mentioned incorporated water trails and water access, including Windmill Point Marina, Bush Mill Stream access and Cat Point Creek launch at Menokin. Interest was expressed in a Scenic River evaluation for the Rappahannock River in Lancaster and Middlesex Counties.

Middle Peninsula Planning District Commission (Region 18) --A total of ten community partners and local government representatives attended the meeting held in Saluda at the planning district offices. Doug Diedrichsen, from the Middlesex Planning District office, mentioned that a new Middlesex County, waterfront access vision plan is being developed. Mathews County has an online water access portal called "[Guide to Mathews County Public Access Sites](#)." Marceia Holland, Belle Isle State Park Manager gave a regional state parks update. She mentioned the Middle Peninsula State Park in Gloucester would



have limited opening in 2018 with public access to the river. Also, Belle Isle State Park recently acquired the original plantation house. Featured projects reviewed included:

- ✓ Connect blueways in Gloucester and Mathews counties with York River and Mobjack Bay.
- ✓ Develop Middle Peninsula State Park, currently the park includes 431 acres.
- ✓ Road endings access according to the [Middle Peninsula Public Access Plan](#).
- ✓ Rotary Poor House Park in Essex County, a 675 acre park supported by the Essex County Rotary. This park was referenced in a local [Resolution of the Essex County Board of Supervisors](#) on September 8, 2015.
- ✓ Parkers Marina as part of the [Captain John Smith National Historic Trail](#).
- ✓ [Woodville County Park](#) in Gloucester- a regional park with multiple types of recreational access.
- ✓ Beaverdam Park Trail connector to the County Courthouse in Gloucester
- ✓ [Werowocomoco](#)
- ✓ Urbanna Water Trail

Crater Planning District Commission (Region 19) -- On October 12, nineteen attended the meeting at the Commission's office in Petersburg. The Friends of the Appomattox River (FOLAR) gave a presentation on the draft master plan for the 23-mile Appomattox River Trail, which is expected to be completed in January 2017. The Cities of Hopewell, Colonial Heights and Petersburg provided outdoor recreation updates, as did the Counties of Chesterfield, Charles City, Surry, Dinwiddie, and Prince George, as well as Fort Lee.

Accomack-Northampton Planning District (Region 22) -- On August 23, twenty attended this meeting held at the Eastern Shore Community College. DCR planners learned about regional interest in integrating health and wellness objectives into regional outdoor planning. A representative from Eastern Shore Healthy Communities brought up the desirability of connecting trails to Eastern Shore towns. Water trails and land trails are a high priority in this region. The importance of Kiptopeke State Park and the National Park Service lands were mentioned.

Hampton Roads Planning District Commission (Region 23 - Two Meetings) -- A total of thirty interested persons attended the two meetings – the first on September 6 in York County at the Tabb Library, and the second on September 8 in Chesapeake at the Commission's office. Updates provided on the projects listed in the 2013 VOP included the regional greenways and trails network, the Dismal Swamp Canal Connector Trail between Chesapeake and North Carolina, Fort Monroe, and projects along the rivers and creeks including the Elizabeth River and Grays Creek in Surry County. Projects reported completed are Pleasure House Point and the North Landing River Natural Area Preserve, which will open to the public later this fall.

## **5) Department of Game and Inland Fisheries (DGIF)**

### **Recreational Fishing**

#### *Stream Fish Community and Recreational Fisheries Stream/River Sampling Summary*

During this reporting period, using boat electrofishing techniques primarily, VDGIF conducted survey work, on sections of a multitude of streams that drain into the geographic area covered by the CZMP. Extensive sampling of stream fish communities occurred in the James, Rappahannock, Shenandoah, and York drainages. Relative abundance indices were generally obtained for all species surveyed. For recreationally important species, additional parameters were examined, including analyses of age structure and growth rates based on examination of otoliths.

The Chickahominy River fish community was sampled at 18 total sites. Focused efforts specific to sportfish and Northern Snakehead occurred at 15 sites on the Rappahannock River.

#### *Tidal River Blue Catfish Diet and Modeling Research Project*

Given the variability observed in blue catfish food habits in Virginia tidal rivers, DGIF has contracted with researchers at Virginia Tech to conduct a multi-year, multi-river, multi-habitat, multi-seasonal assessment of blue catfish food habits. At the conclusion of the multiyear fieldwork component of the study the researchers have been asked to assess blue catfish diet, and model impacts on other species at the population level.

The goal of this project is to develop the data required to inform discussions and assessments of potential impacts of blue catfish on other species in the Chesapeake Bay watershed. Data that are currently lacking – DGIF lacks the understanding to make informed statements of impact in most cases. A portion of this study was recently published, which focused on impacts to anadromous fish during the spring run in the James River. The citation is:

Schmitt, J.D., E.M. Hallerman, A. Bunch, Z. Moran, J.A. Emmel, D.J. Orth. 2017. Predation and prey selectivity by nonnative catfish on migrating alosines in an Atlantic slope estuary. *Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science* 9:108–125.

#### *Assessment of Critical Habitats for Recovering the Chesapeake Bay Atlantic Sturgeon Distinct Population Segment*

In 2016–2017, DGIF biologists conducted periodic maintenance of the James River Atlantic sturgeon receiver array, conducting receiver maintenance and data download and maintenance for 26–28 receiver stations distributed in the tidal river from Richmond (Henrico County/Chesterfield County) downstream to Newport News (Newport News/Isle of Wight County). Receiver deployment is intended to be part of an ongoing effort to track Atlantic sturgeon movements within the tidal James River system. DGIF conducts this maintenance in cooperation with NOAA, U.S. Fish and Wildlife Service, Virginia Commonwealth University, and Virginia Institute of Marine Science. Two-hundred and eighty-eight tagged fish were detected in the James River array. Distinct spawning patterns were found with migrating adult fish. Some fish showed high number of detections throughout the study timeframe which were more prevalent in the lower sections of the James. These are likely sub-adult fish which are known to reside in lower estuarine habitats in search of food.

#### *Exploring Pathways of Atlantic Sturgeon DNA in the Pamunkey River Food Web*

A study was developed with the primary goal to determine the most likely pathway(s) of Atlantic Sturgeon DNA in the Pamunkey River food web. In fall 2016 (late September through October) DGIF personnel collected and preserved 559 stomachs from piscivorous and omnivorous species at two sites located within the Atlantic Sturgeon spawning area across four sampling occasions. Meticulous care was taken to avoid sample contamination. At each site and sampling occasion, water samples (total across all sites and occasions = 32) were collected for eDNA analysis and acoustic telemetry was used to detect if tagged Atlantic Sturgeon were present. DNA metabarcoding is currently being contracted out to determine all diet items in each stomach.

Reports detailing results will be prepared under Sportfish Restoration Grant F-111-R.

### **Waterfowl**

#### *Mid-Winter Waterfowl Surveys*

Annual monitoring and evaluation of continental waterfowl populations is necessary to make informed management decisions and to evaluate management actions such as hunting seasons and habitat manipulations. Migratory waterfowl cross state and international borders and are therefore managed on a flyway and even continental basis. Virginia cooperates with other state and federal agencies in conducting coordinated surveys and monitoring programs to evaluate the overall status of waterfowl populations. This information is used to develop harvest regulations and habitat management strategies.

The mid-winter surveys are designed to estimate populations of waterfowl when they are concentrated on their wintering grounds. Surveys are conducted by DGIF staff during the first week of January with fixed wing airplanes throughout the Chesapeake Bay and its major tributaries. The table below shows the primary groups of waterfowl counted in the mid-winter survey in January 2017, the total number of the waterfowl counted and the percent changes from the five-year average for that waterfowl group.

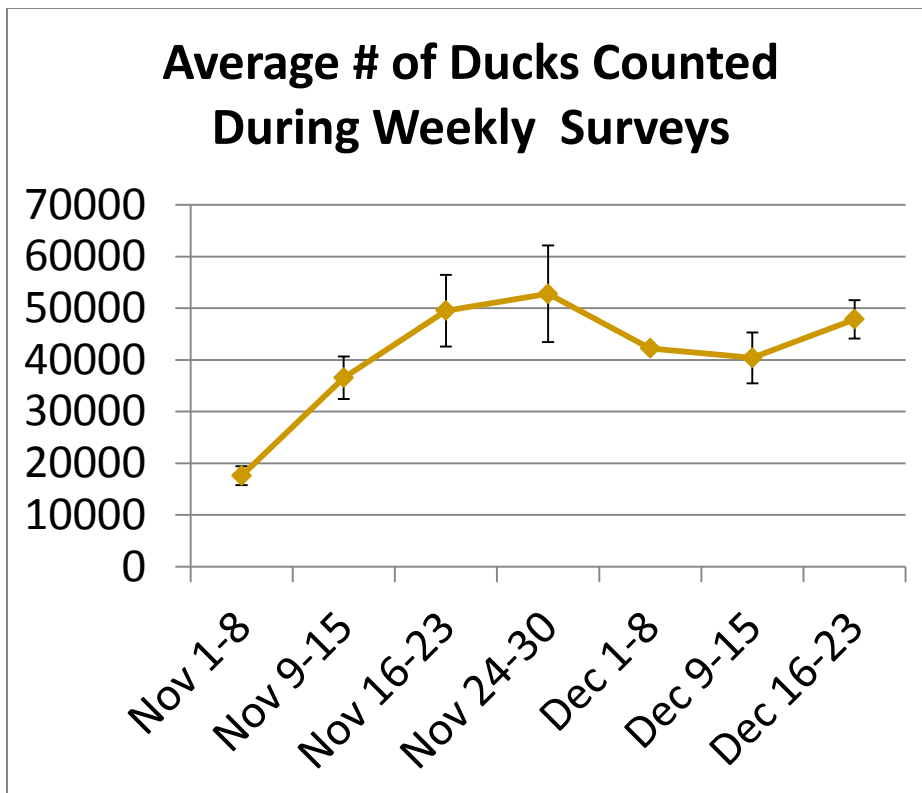
Table 1. The primary guilds of waterfowl counted in the 2017 Virginia Mid-Winter Survey, the total estimate and percent change from the five-year average.

<b>Waterfowl Groups Counted</b>	<b>Total</b>	<b>% Change From 5-year Average</b>
Dabbling Ducks	64,694	+3.5%
Diving Ducks	57,444	-28.6%
Sea Ducks	5,414	+83%
Mergansers	801	-34%
Geese	151,724	+7%
Swans	7,486	-21%

#### *Migration Timing Study*

In 2016, VDGIF staff continued the fourth year of a weekly aerial waterfowl survey to research the timing of the waterfowl migration in late fall and early winter. Waterfowl migration during this time period may be more influenced by photoperiod (day length) than decreases in temperature, which typically drives the migration later in the winter. A replicated study over several years provides more insight in to this migration.

Surveys began the first week of November and ended in the third week of December. Data was collected via aerial surveys in watersheds of the Coastal Zone historically containing high populations of waterfowl. Surveys were conducted on Back Bay, the James, Pamunkey, Rappahannock and York rivers. Data from this survey is used when setting waterfowl seasons. Preliminary results show that the number of waterfowl in coastal Virginia begins to rise in November, peaks during the last two weeks of November with populations declining during the first two weeks of December as staging waterfowl move towards wintering grounds farther south.



#### *Winter American Black Duck Banding*

American Black Duck populations have declined by as much as 60% on the wintering grounds and continue to be a species of management concern (Steiner 1984, Whitman and Meredith 1987). Possessing annual estimates of black duck population characteristics, including abundance, sex and age structure, and vital rates (i.e., survival and recruitment) is critical to achieving the goals of the North American Waterfowl Management Plan (NAWMP). These estimates form the basis of black duck adaptive management and allow researchers and managers to assess model predictions, evaluate responses of black ducks to management, and track progress towards NAWMP goals. Black duck population monitoring consists of three complementary programs: seasonal banding, the Mid-Winter Inventory, and the Eastern Breeding Waterfowl Survey.

2017 was the eighth year of a study designed to assess differences in vital rates between black ducks banded during the pre and post hunting seasons. DGIF is a cooperator on this project along with the BDJV, the Atlantic Flyway Council and the United States Fish and Wildlife Service. In 2017, 650 ducks were captured and banded, including 454 black ducks. During the course of this study DGIF has banded 2,152 ducks including 1,225 black ducks. Band return and recapture data will help provide critical life history information for black ducks wintering in this area. This is especially important as the American black duck bag limit will increase from one bird to two in the 2017-2018 waterfowl season for the first time in 30 years.

#### *Tundra Swan Productivity Surveys*

Productivity surveys are conducted annually throughout North America to monitor goose, swan and brant populations. Scan surveys are a common method used to assess productivity and to determine juvenile percentage and family size within a flock of selected waterfowl. These surveys provide an indication of the previous year's breeding and nest success. In the Atlantic Flyway, productivity surveys are conducted annually for Atlantic Brant and Tundra Swans.

In December of 2016, the DGIF conducted productivity surveys for Tundra Swans at seven locations within the coastal zone. These counts surveyed 894 swans of which 68 were juveniles, indicating a recruitment rate of



7.6%. Recruitment rate throughout the Atlantic Flyway is a critical parameter for the management of Tundra Swans under the Eastern Population Tundra Swan Management Plan.

#### *Avian Influenza Surveillance*

In cooperation with the U.S. Department of Agriculture, DGIF migratory game bird staff in the coastal zone sampled 585 dabbling ducks for Highly Pathogenic Avian Influenza (HPAI). HPAI viruses have been spreading across the county and pose significant threats to the domestic poultry industry. The purpose of surveillance efforts are to provide an “early warning” of the spread of the virus for states and industry. The Virginia HPAI surveillance plan required the sampling of 585 dabbling ducks in the Lower Chesapeake Bay and Chowan-Roanoke River watersheds. Dabbling ducks were chosen for this sampling effort because of their propensity to serve as a reservoir for HPAI viruses. Samples were collected from hunter harvested waterfowl. To date no positive tests for HPAI have been found.

#### *Submerged Aquatic Vegetation Survey in Back Bay, Virginia*

A survey to evaluate the abundance and species composition of Submerged Aquatic Vegetation (SAV) has been conducted periodically in Back Bay since the late 1950's. The survey was conducted occasionally during the 1990's, but only once (2004) from 2000 through 2008. The survey was reinitiated by the Virginia Department of Game & Inland Fisheries in 2009 and has been conducted each year since then (2009 – 2016).

In 2016, the SAV survey was conducted in mid-October, using the same methods that have been used in the past. Three two-square-foot bottom samples were taken using modified oyster tongs at 500-meter intervals along eight transect lines in the Virginia portion of Back Bay. A total of 273 samples were taken. For each sample, the species of SAV was recorded along with a visual estimate of percent cover or density (low, medium, high). Water depth and GPS coordinates were recorded at each sampling location.

SAV was found in 79 of the 273 samples (29%). In general, SAV was more abundant on those transects located in sheltered areas, or in areas of shallower water. The species of SAV found were similar to those reported in previous years, but were present in slightly different percentages. Naiad was the most common SAV and was detected in 24% of the samples. Other SAV species found (and percent occurrence) included Eurasian milfoil (13%), wild celery (17%), redhead grass (3%), sago pondweed (6%), *Nitella* spp. (3%) and *Chara* spp. (2%). SAV abundance in 2016 was similar to that of 2015, but below the 2009-2015 average (34%).

Submerged Aquatic Vegetation is an important component of the Back Bay ecosystem. SAV helps improve water quality and provides an important food and habitat source for many fish and wildlife species. Waterfowl numbers in Back Bay are generally correlated with SAV abundance. In years with good SAV growth, waterfowl numbers are generally high, while in poor SAV years waterfowl numbers are usually much lower. Mid-winter waterfowl counts were plotted with SAV abundance to show this relationship (Figure 1).

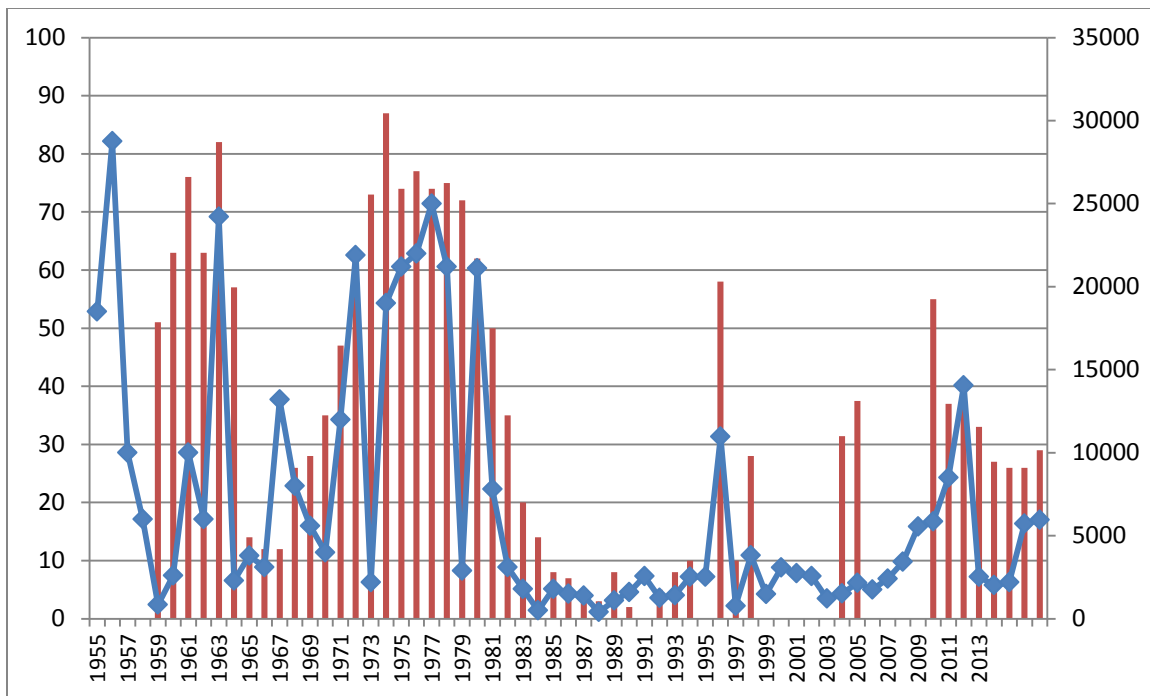


Figure 1. Dabbling duck numbers (blue line in thousands, right axis) and the frequency of Submerged Aquatic Vegetation (SAV) (percent, left axis) from 1955–2017 in Back Bay, Virginia.

### Geographic Information Systems/Data Management

DGIF continued to maintain spatial datasets of wildlife locations and resources in the coastal zone. In addition, during this reporting period DGIF Fish and Wildlife Information and GIS staff worked cooperatively to update the following coverages that fall within the coastal zone: Threatened and Endangered Species Waters, and Anadromous Fish Use Areas. These layers were provided to the multi-partner Virginia Ecological Value Assessment (VEVA) project by our GIS staff, who also updated the following DGIF data in support of the project: Aquatic Tiered Species Habitat (confirmed and potential), Terrestrial Tiered Species Habitat (confirmed and potential), Important Bird Areas, Colonial Waterbird Colonies, National Wetlands Inventory data Streams layers, and unique areas for both terrestrial and aquatic wildlife known from the Coastal Zone.

### Environmental Services

#### *Tidal Surface Water Intake Proposals*

DGIF’s Environmental Services Section (ESS) is responsible for reviewing permit applications, policy changes, land use changes, NEPA documents, land development projects, water supply or intake projects and other items to ensure avoidance of impacts upon threatened, endangered, and tiered species; designated wildlife resources; and any of the programs or resources over which we have jurisdiction or our constituents have an interest. Notable during this reporting period is that DGIF’s ESS staff have been working closely with VDEQ and VMRC on a number of newly proposed tidal river intakes. Tidal intakes represent a different suite of possible wildlife impacts than their non-tidal, entirely freshwater counterparts, requiring DGIF ESS and Aquatic staff to stretch their tidal systems understanding.

ESS also has reviewed a number of private and commercial development projects, energy projects, and road projects within the coastal zone during this reporting period.

### Wetlands

#### *Mitigation Banking*

VDGIF continues to participate on the Inter-Agency Review Team that oversees stream and wetland mitigation banking and provide input on new banks all over Virginia, including the coastal zone. Numerous proposals

have been made for new banks and/or additions to existing banks within the coastal region of Virginia during this reporting cycle.

### *Wetland Restoration*

DGIF continues to have an active voluntary wetland restoration program. The program assists private, state, local, and federal government landowners to restore wetlands on their property. Landowners receive assistance with site selection, cost-share programs, restoration design, and permit issues. The Virginia Department of Game and Inland Fisheries is actively restoring wetland habitats in Virginia. Partnerships with organizations such as The U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program, The U.S. Department of Agriculture's farm bill programs, Ducks Unlimited, The Chesapeake Bay Foundation, and many others have resulted in additional wetland acres restored. We also administer and utilize funds from the Virginia Migratory Waterfowl Stamp to provide assistance to non-profit organizations for wetland restoration and enhancement activities. These funds are provided from a mandatory stamp required of waterfowl hunters.

DGIF currently has three large wetland restoration projects underway. DGIF is utilizing Hurricane Sandy Relief Funds in partnership with the Wildlife Foundation of Virginia to restore 4,000 acres of wetland hydrology and vegetation on our Cavalier Wildlife Management Area in the City of Chesapeake. The Agency is installing 29 weirs on existing ditches and planting 600 acres of hardwoods in the project area. In conjunction with Ducks Unlimited and other partners, DGIF are currently installing a new water distribution system at the Princess Anne Wildlife Management Area to allow for efficient water distribution during spring and fall water bird migration and to assist in moist soil vegetation management for increased food resources. Again, in conjunction with Ducks Unlimited, we are in the planning stages of replacing all water control structures at our Hog Island Wildlife Management Area.

### **Invasive Species**

#### *Feral Hogs*

DGIF continues its partnership with USDA-Wildlife Services Virginia (USDA-WS) staff in leading the Virginia Interagency Feral Hog Committee. Formed in 2011, the committee serves to address the growing feral hog population noted in other southeastern states and in Virginia most notable in 2010 when numerous groups of loose or feral swine were discovered in previously unoccupied areas across the Commonwealth. For FY2017, DGIF funded \$120,000 to USDA-WS to continue feral hog monitoring, mapping, and trapping operations at 3 select locations across Virginia: Orange/Culpeper counties, Southwest Virginia, and the Southeast areas of Back Bay National Wildlife Refuge (BBNWR) and False Cape State Park (FCSP). This funding assists one of three USDA-WS specialists to continue monitoring and trapping efforts in BBNWR and FCSP in addition to spending a portion of their annual time assisting DGIF staff with feral hog trapping efforts at Cavalier Wildlife Management Area (WMA) where transient groups of hogs wander onto the property seasonally.

A new state law effective July 2016 allows for federal and state wildlife agencies to control for feral swine by aircraft (§29.1-114). In February 2017, DGIF staff assisted USDA-WS in collecting feral hogs via helicopter over FCSP, resulting in removal of 24 feral hogs in 3 days. Tissue and blood samples were taken from select hogs for disease and genetic analyses. These hogs were previously inaccessible via traditional trapping methods as they were utilizing very remote marsh areas where trap setups were impossible logistically. The operation was a huge success, and marked a new direction towards attempts to eradicate the Southeast Virginia population of feral hogs on FCSP and BBNWR. Future coordination with North Carolina Wildlife Resources Commission, USDA-WS, USFWS staff at Mackay Island NWR, and private citizens just south of the Virginia state line will hopefully result in a similar effort in North Carolina. Combined with future aerial operations in Virginia, joint aerial operations over both states will allow for eradication of this coastal population of feral hogs that both states have shared for decades. In FY2017, 5 feral hogs have been trapped and removed from Cavalier WMA by DGIF staff with assistance from the Southeastern USDA-WS hog specialist. Trapping efforts continue into

FY2018 to target the few remaining feral hogs that have been detected on trail cameras near the periphery of the property adjoining private land.

### *Nutria*

Nutria were first confirmed in Virginia near Back Bay in 1956, and are believed to have entered Virginia from North Carolina via the North Landing River. Nutria exhibit high reproductive potential, theoretically increase to 16,000 individuals in just three years. Nutria can be extremely destructive to marsh vegetation, possessing voracious appetites and consuming a quarter of their body weight daily, feeding on the tender roots of marsh grasses and succulent portions of aquatic vegetation. These activities result in significant and substantial adverse impacts upon native wildlife and natural communities.

The core Virginia population appeared to be centered in the Back Bay / Virginia Beach area, with confirmed reports as far west as Southampton and Prince George County. Marsh systems of coastal Virginia north of the James River are assumed to be threatened by nutria that occurs within normal annual range expansion limits. Early detection of the invasive species nutria (*Myocastor coypus*) has been determined to be the most effective way of preventing population range expansion. In addition, should nutria establish populations there, early detection would be the greatest asset in control and eradication because it is critical before removal or control programs can begin.

Detecting a single or small population of nutria in a vast natural marsh can be very difficult. In recognition of the importance of early detection, and how difficult it is, DGIF has developed employee canine trainers and canines to detect nutria and procured the assets including a shallow draft watercraft and GPS tracking systems to ensure effective work. In addition, in efforts to understand the most effective environmental conditions under which to use canines, DGIF has studied canine performance accuracy (sensitivity and specificity) to detect nutria target odors and avoid non-target likely marsh mammal (muskrat, beaver, raccoon, and otter) odors, and efficiency by the time it took to locate a target and the distance at which they detected it under various environmental conditions. We found our canine test subjects were extremely accurate; across 688 trials conducted either indoors or outdoors under a variety of atmospheric conditions the subjects altogether committed only 6 detection errors (2 misses, and 4 false alarms), for an aggregate accuracy rate of 99.1% and because the subjects' sensitivity- and specificity-scores were so high and do not change under the conditions of the experiment or in co-variation with any atmospheric data, no parametric or correlational analyses are performed on this data. Significant positive correlations were found between ambient temperature and subject time to target (i.e. as ambient temperature increased, subjects needed more time to locate the target), relative humidity and subject time to target, wind velocity and alert distance to target, and wind direction and alert distance to target. Significant negative correlations were also found between ambient temperature and alert distance to target (i.e. as temperature increased, subjects needed to get closer to the target to detect it), relative humidity and alert distance to target, wind velocity and time to target, wind direction and time to target, and alert distance to target and time to target. Pearson's product-moment correlation coefficients were calculated to examine the relationship between subject's alert distance and the environment. Data suggest there was a significant negative correlation between relative humidity and ambient temperature to distance to the target and were weak predictors of alert distance as humidity accounting for slightly less than 5%, 10% of the variance ( $r^2 = .044, .098$ ), and as ambient temperature accounts for slightly less than 10%, 15% of the variance. ( $r^2 = .095, .175$ ) in alert distance. There was a significant positive correlation between wind velocity and alert distance to the target. As such, wind velocity is an excellent predictor of alert distance as wind velocity accounts for over 70% and 85% of the variance in alert distance ( $r^2 = .716, .862$ ).

Knowing and using this information we have great confidence in canine accuracy and can increase canine field detection performance efficiency by placing the greatest value to increased wind velocity and although important, less value to lower ambient temperatures and lower relative humidity. With this knowledge we have deployed on 8 sightings in the "Early Detection, Rapid Response" nutria management zone north of the James River. There has been no evidence detected and these sites will be monitored and searched periodically.



Canines are particularly interesting to the public and so we have used them in 6 presentations and demonstrations to educate on invasive species, wetlands and our canine friends. These included The Gloucester County Master Gardner's, Friends of the Dragon Run, The Virginia Living Museum Earth Day twice and the Seaford Yacht Club. We plan to continue to educate and solicit for public for nutria sighting reports by placing nutria identification signs at high probability department owned boat ramps. We plan to continue to respond to public sightings with a canine detection team to detect early and prevent range expansion.

### **NonGame Species Monitoring and Research**

*Confirmation of state Endangered Eastern Tiger Salamander (*Ambystoma tigrinum tigrinum*) breeding site, Westmoreland County (Exact location intentionally withheld)*

In Virginia, the Eastern Tiger Salamander (*Ambystoma tigrinum tigrinum*) has only been documented in Augusta, Nelson, Mathews, York and Isle of Wight counties (Virginia Fish and Wildlife Information System database). Although Hanover County is listed as a county occurrence, this record is unsubstantiated (Terwilliger, K. 1991. Virginia's Endangered Species. The McDonald and Woodward Publishing Company. Blacksburg, Virginia. 672 pp.). The York County record was based on a single specimen and no breeding site has ever been identified.

On 16 March 2015, a landowner in Westmoreland County overturned a horse trough and found what she believed was a "lizard". A photograph was submitted to the Virginia Herpetological Society and it was identified as an Eastern Tiger Salamander. Based on its swollen appearance, it appeared to be a gravid female. On 11 March 2016, the author met with the landowner in hopes of finding a breeding site. The landowner was unaware of any bodies of water in the immediate area, but did refer to a heavily forested area across the highway (~400m east-northeast) where she often heard frog choruses. Investigating the area resulted in finding what appeared to be an old mill pond (~1 acre). Much of the pond was less than a meter in depth with an open canopy and an abundance of submerged aquatic vegetation. A brief survey (~30 minutes) resulted in the discovery of more than 12 Ambystomid egg masses, some of which appeared to be Spotted Salamander (*Ambystoma maculatum*). An additional survey on 16 February 2017 revealed more than 50 Eastern Tiger Salamander egg masses in the mill pond, confirming the site as a breeding site. This is also the only known artificially created breeding site in Virginia. A photograph of the adult salamander has been deposited in the VHS archives (#360). Because the Eastern Tiger Salamander is State Endangered and a Tier II Species of Greatest Conservation Concern in Virginia's Wildlife Action Plan, any new breeding sites are critical to the conservation of the species.



Eastern tiger salamander

### *American Oystercatcher Winter Surveys*

The DGIF, The Nature Conservancy – Virginia Coast Reserve and the USFWS did not conduct an annual winter American Oystercatcher survey in 2016 due to staff shortages and unfavorable weather conditions.

### *Piping Plover Fall Migration Surveys*

From August 2 – October 28, 2016 DGIF and staff from Chincoteague National Wildlife Refuge conducted weekly piping plover fall migration surveys on nine sampling plots along the Virginia barrier island chain. The purpose of this effort was to quantify the number of plovers utilizing the barrier islands during the fall migratory period, look for banded individuals to assist with survival studies and establish length of stay in Virginia, and assess human impacts at critical stopover locations. Sixty-seven surveys were completed, which yielded 186 observations of one or more piping plovers. A total of 304 plovers were encountered, nine of which were uniquely marked individuals. One of the banded individuals was first observed in early August and remained in Virginia until the third week in October. Two banded individuals were observed twice, both in September over a two-week period. The remaining marked individuals were only observed once. The largest flocks (10 or more birds) were observed mostly on the northern barrier islands in the ocean intertidal zone, on mudflats and occasionally above the high tide line.

### *Introductory Materials for update of the Virginia Marine Mammal Conservation Plan*

The original Management Plan for Sea Turtles and Marine Mammals in Virginia was published in 1995 and was undertaken, in part, through a Virginia Coastal Zone Management Program (VCZM) grant. The sea turtle component of the plan has been updated as a combined effort with the state of Maryland and is awaiting internal review. The same update needs to be completed for the marine mammal component of the original plan, which is lacking the latest information on the distribution, abundance and ecology of these species in Virginia and does not address new threats that have arisen since the writing of the original plan. During this reporting period, the DGIF entered into a contract with the Virginia Aquarium and Marine Science Foundation to draft the introductory component of the marine mammal conservation plan that will include the following sections: (1) species descriptions that will include distribution, abundance estimates and life history parameters most relevant to Virginia; (2) current limiting factors and threats with a focus on those which are most relevant to Virginia; (3) existing legislation, regulations & Cooperative Agreements in Virginia; and (4) current marine mammal conservation efforts in Virginia. A near complete draft of the plan's introduction was reviewed by DGIF at the end of this reporting period and the completion of the final draft is expected sometime during the next reporting period.

### *Sea Turtles and Fishing Piers – Mitigating Hook-and-line Interactions*

Sea turtles in Virginia face many threats to their survival, including serious injury and mortality from entanglement in commercial fishing gear, vessel strikes from both commercial and recreational vessels, and entanglement and ingestion of recreational hook and line gear and marine debris. While federal regulations address many concerns posed by commercial fishing, interactions with the recreational hook-and-line fisheries remain largely unreported and/or unaddressed. In recent years, reported interactions between recreational fishermen and sea turtles in Virginia have been increasing dramatically. From 2009-2012, an average of 2.5 “hooked” sea turtles were reported per season. Since then, the numbers of these interactions, as well as the number of turtles admitted into rehabilitation per season, have been increasing substantially. In 2015 alone, a total of 47 sea turtles were incidentally taken by the hook and line fishery, of which 35 underwent some level of rehabilitation prior to being released, and in 2016, the total exceeded 50 turtles.

During this reporting period, the DGIF entered into a contract with the Virginia Aquarium and Marine Science Foundation (VAQF) to develop realistic conservation, mitigation and/or regulatory measures that minimize the impact of recreational hook and line fishing on sea turtles in Virginia. Because most of the hook-and-line interactions documented in Virginia occurred on piers, most of the effort will focus on the recreational pier fishery. The VAQF proposes to fulfill the following three objectives: (1) build on the pilot study efforts of the Virginia Pier Partner Program to educate the recreational pier fishing community to increase reporting of hooked sea turtles and encourage proper response to these interactions; (2) expand collection and analysis of data gathered from piers and pier-caught sea turtles to better understand the nature of these interactions for mitigation; and (3) test technology that will allow for the detection of ingested hooks without veterinary assistance; thus allowing for rapid release of otherwise healthy turtles. Progress made to date includes the

initiation of carcass trials for hook detection using three different metal detectors, the development of protocols for ground-truthing metal detector scans that includes the use of an in-house digital radiograph, and the entry of all of the pier survey data collected in 2016 into a spreadsheet. Final products are due in April 2018.

#### *Atlantic Slope Freshwater Mussel Propagation*

The VA Department of Game & Inland Fisheries continues its cooperative Atlantic Slope freshwater mussel propagation facility with the U.S. Fish & Wildlife Services' Harrison Lake National Fish Hatchery in Charles City, marking the 10<sup>th</sup> year of production and 11<sup>th</sup> year of operation at the VA Fisheries and Aquatic Wildlife Center (VFAWC). Propagation for the 2017 season started in December with the collection of sculpin from Smith Creek near Harrisonburg. Mussel broodstock collection began in late February, with collection from the Nottoway River in Southampton County and into March with collection from the Dan River, NC; South River, Augusta County; and the Delaware River, DE. A total of 64 gravid females individuals of 6 species were collected from the 3 rivers. We plan to collect the state threatened green floater in April from the Tye River and Jennys Creek, Nelson County; and the Dan River, NC. In May and early June, we plan to collect up to 12 gravid females of the endangered James spinymussel from each the Dan River, NC, and Rock Island Creek, Buckingham County. Infestations began in February with three batches of notched rainbow (*Villosa constricta*) infested on approximately 250 sculpin. Over 30K juveniles were produced and are currently being grown out. In April, additional infestations will be conducted with other target species and are anticipated to continue thru June. Target propagation goal for 2017 is approximately 747,000 juvenile mussels of 9 species with grow out and release of approximately 30K mussels. Most of the species targeted for propagation in 2017 are not listed as threatened or endangered, but all are either listed as a species of greatest conservation need in Virginia's Wildlife Action Plan or as a species of concern by the USFWS. However, work with the federally endangered James spinymussel (*Pleurobema collina*; JSM) is being continued for a 3<sup>rd</sup> year and we are again focusing efforts on the state-threatened and federally petitioned green floater (*Lasmigona subviridis*). Currently, we are holding over 1K JSM propagated in 2016 and they are over 10 mm in length and nearly 300 green floater propagated in 2016 that are over 20 mm in length. In 2017, we also plan to start work with the state threatened and federally petitioned Atlantic pigtoe (*Fusconaia masoni*) In addition to propagation during 2017, numerous subadult mussels propagated from 2014-2016 are being held for continued grow-out and release, with some mussels slated to be sent to NC State University and the USFWS in WI for toxicity studies. Facility wise, VFAWC remains relatively unchanged from our expansion in 2012. New systems have been constructed to try for improved survival and grow out.

### **SECTION B.3 FEDERAL CONSISTENCY**

During the period of October 1, 2016 and March 31, 2017, the Office of Environmental Impact Review/Federal Consistency (OEIR) reviewed 95 development projects and management plans for consistency with the Virginia Coastal Zone Management Program (VCP). This represents 75% of the total amount of projects reviewed (127) during this period. Major state projects accounted for 20 projects, 6 were State Corporation Commission reviews, 6 were National Environmental Policy Act (NEPA) documents without a federal consistency component, 51 were federal actions, and 44 were federally funded projects. The 51 federal actions included 30 federal agency activities, 21 federal licenses and approvals, and 0 outer continental shelf projects. The 30 federal agency activities included 7 projects submitted under the residual category pursuant to the federal consistency regulation (15 CFR 930.31(c)), which consisted of U. S. Department of Housing and Urban Development (HUD) mortgage insurance projects. All federal consistency determinations and federal consistency certifications were completed within the established legal deadlines.

The OEIR continues to provide informal training on federal consistency requirements to consultants who prepare consistency documents for federal agencies and applicants for federal permits and maintains a website for Federal Consistency Reviews that can be accessed through DEQ's main webpage or found at

<http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx> The OEIR webpage is updated weekly.

Table 1 depicts federal projects in Tidewater Virginia reviewed from 10-1-16 to 3-31-17.

TYPE OF FEDERAL PROJECTS REVIEWED*	NUMBER OF PROJECTS COMPLETED	REVIEW PERIOD
*Direct Federal Actions	30	30-60 Days
** Federal Activities (approvals & permits)	21	90 Days
***Federally Funded Projects	44	30 Days
Outer Continental Shelf	0	45-60 Days
<b>TOTAL</b>	<b>95</b>	<b>30-90 DAYS</b>

\*Includes 7 FCDs reviewed under the residual category of Subpart C of the Regulations. (HUD Mortgage Insurances).

\*\*These are projects reviewed under Subpart D of the Regulations. These projects include individual permits issued pursuant to Section 404 of the Clean Water Act administered by the U.S. Army Corps of Engineers. Nationwide and regional general permits are certified every five years or as requested by the Norfolk District U.S. Army Corps of Engineers.

\*\*\* These include federal assistance to state and local government reviewed under Subpart F.

## **FEDERAL PROJECTS REVIEWED FOR CONSISTENCY WITH THE VCP from 10/1/16 to 3/31/17**

### **I. Federal Agency Projects**

*The following projects are examples of federal agency projects subject to Subpart C of 15 CFR 930.33(a).*

#### Kitty Hawk Wind Energy Area

The Department of the Interior (DOI), Bureau of Ocean Energy Management (BOEM) is considering the issuance of a commercial wind energy lease and approving site assessment activities within the Kitty Hawk Wind Energy Area (WEA) offshore North Carolina. The State of North Carolina and the Commonwealth of Virginia share common coastal management issues and have similar enforceable policies as identified by their respective Coastal Management Programs. Due to the proximity of the Kitty Hawk WEA to both states, and their shared impacts on environmental and socioeconomic resources and uses, BOEM has prepared a single Federal Consistency Determination for the Kitty Hawk WEA. BOEM is proposing to issue a commercial wind energy lease within the Kitty Hawk WEA and approve site assessment activities that would determine whether the lease is suitable for, and would support, commercial-scale wind energy production. The lease, by itself, would not authorize the lessee to construct or operate any wind energy project on the Outer Continental Shelf. Activities that may occur over the site assessment period of the lease (i.e., up to five years) include site characterization survey activities and site assessment activities involving the construction, operation, maintenance, and decommissioning of a meteorological tower and/or buoys. Site characterization surveys



would inform a lessee about site specifics of a lease area in order to prepare for submission of a site assessment plan (SAP) and, potentially, a construction and operations plan (COP).

#### Re-issuance of Regional Permit 20, Creation of Artificial Reefs and Dredging Old Shellfish Reefs

The U.S. Army Corps of Engineers Norfolk District proposes to revise and reissue Regional Permit 20 (RP-20). The Norfolk District's 2017 reissuance of RP-20 (17-RP-20) is effective for a period of five years. The regional permit authorizes the creation of artificial reefs (oyster and fish haven) and dredging of old shellfish reefs, when the material, dredge shell or structural, will be used to create new or enhance existing natural or artificial reefs owned, operated or managed by the Commonwealth of Virginia through the Virginia Marine Resources Commission. The intent of 17-RP-20 is to provide a streamlined permitting process for those listed activities (i.e. oyster shell dredging and planting, and fish havens) that do not adversely affect general navigation and have only minimal adverse impact to the aquatic environment. The impacts may not result in more than minimal individual or cumulative adverse environmental impacts. DEQ concurred that the proposal is consistent with the Virginia CZM Program provided all applicable permits and approvals are obtained.

#### HUD Finance Transactions General Negative Determination

The U.S. Department of Housing and Urban Development (HUD) provides federal financial assistance to applicants to finance transactions that are intended to obtain or preserve funding for existing properties, which involve no proposed ground disturbance and no development activities of any kind. This action applies to properties that require the completion of a Phase I Environmental Site Assessment (ESA) and HUD 4128 Environmental Assessment and Compliance. The Baltimore Field Office of HUD anticipates that there would be approximately one hundred (100) HUD finance transactions over a determined period of five (5) years in Virginia with no proposed ground disturbance. Based on the administrative nature of the financing transaction, under the Coastal Zone Management Act §307(c)(1) and 15 CFR 930, Subpart C, HUD has determined that these proposed federal actions will have no effect on the coastal uses and/or natural resources of Virginia that are addressed by the nine enforceable policies of the Virginia Coastal Zone Management (CZM) Program.

#### Dredging at USCG Station Little Creek Boat Basin

The U.S. Coast Guard (Coast Guard) has submitted a DEA and FCD for the proposed maintenance dredging of a boat basin and moorings at the Coast Guard Station Little Creek in Virginia Beach, Virginia. The station is located within Little Creek Cove, which connects to the navigable Little Creek Channel, at the south end of the Lower Chesapeake Bay. The station, home port for three large cutters and a number of smaller vessels, is located on the Joint Expeditionary Base Little Creek- Fort Story. Maintenance dredging was last performed in 1994 and, due to sedimentation, there is not sufficient draft for the Coast Guard vessels to properly operate at the station. The proposed project will mechanically dredge the boat basin and moorings to a required depth of eight feet below mean lower low water (MLLW) with a one-foot over-dredge for a maximum dredge depth of 9 feet below MLLW. The dredging will remove approximately 635 cubic yards of sediment from an approximately 0.17-acre area. An approximate 0.40-acre of open waters will be temporarily impacted and the entire project will occur within the existing boat basin, approximately 120 feet from the shoreline. The dredge material, which has been characterized as a non-hazardous waste, will be deposited on barges, dewatered within a turbidity curtain, transported by barge to an unloading site, offloaded to lined/watertight trucks that will be covered, and transported by truck to Clearfield MMG, Inc., a licensed disposal facility located in Chesapeake, Virginia. DEQ concurred that the proposal is consistent with the Virginia CZM Program provided all applicable permits and approvals are obtained.

## **II. Residual Category**

*The following consistency determinations were submitted as a residual category of Subpart C pursuant to the federal consistency regulation 15 CFR 930.31(c).*

### Mezzo Apartment Homes

DEQ completed a coordinated review of a Federal Consistency Determination (FCD) submitted by the U.S. Department of Housing and Urban Development (HUD). HUD proposes to provide mortgage insurance under HUD Section 221(d)(4) to S.L. Nusbaum Realty Company, which will finance the construction of the proposed Mezzo Apartment Homes. The Section 221(d)(4) program assists private industry in the construction or rehabilitation of multifamily rental and cooperative housing for moderate-income and displaced families. HUD has submitted a Federal Consistency Determination for the proposed construction of a ten building, 282-unit multi-family apartment complex with a clubhouse. The proposed site is a 16.12-acre parcel of undeveloped, wooded land located at 5400 Virginia Beach Boulevard in the City of Virginia Beach, Virginia. Utilities are available in the area. Permanent impacts to 0.521-acre of wetlands are expected and the appropriate permit will be obtained from the U.S. Army Corps of Engineers. According to the FCD, the project is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Zone Management (CZM) Program. Based on DEQ's review of the FCD and the comments from reviewing agencies, DEQ concurs that the proposal is consistent, to the maximum extent practicable, with the enforceable policies of the Virginia Coastal Zone Management Program provided the applicant obtains all required permits and authorizations with respect to impacts to erosion and sediment control, stormwater management, and air pollution control.

### Brandermill Assisted Living

The U.S. Department of Housing and Urban Development proposes to provide mortgage insurance under HUD Section 232 to Grandbridge Real Estate Capital, LLC (applicant), which will finance the construction of the proposed Brandermill Assisted Living. The Section 232 program assists private industry in the construction of residential care facilities. HUD has submitted a Federal Consistency Determination for the proposed construction at 5800 Harbour Lane in Midlothian, Chesterfield County. The proposed four-story assisted living and memory care facility will include 92 resident rooms with 104 beds (72 assisted living and 32 memory care beds). Amenities will include two on-site salons, a salon store, private and main dining areas, a pub, a general store, a full-service commercial kitchen, a theater, a physical therapy room, a fitness room, lounge areas, a library and family room, a snack room, laundry facility, sun room, activity/game room, and a spa. Exterior amenities will include patios, covered porches, walking paths and landscaping. The currently vacant property was previously developed with a hotel and conference center and the site of the new building will be within the foundational footprint of the former conference center. According to the FCD, the project is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Zone Management (CZM) Program.

## **III. Federal Activities (Permits, Licenses and Approval)**

*These projects were reviewed pursuant to Subpart D of the Consistency Regulations (15 CFR §930.53)*

### Accomack County Airport Pavement Rehabilitation

DEQ completed a coordinated review of a Federal Consistency Certification (FCC) submitted by Accomack County (applicant) for pavement rehabilitation work at the Accomack County Airport in Accomack County, Virginia. The applicant is seeking approval from the Federal Aviation Administration (FAA) for the project work. The proposed project involves the rehabilitation of all existing pavement at the airport, located in Melfa, Virginia. The existing pavement shows signs of cracking and pavement failure. The areas for rehabilitation include: Runway 3-21, Taxiway A, Taxiway A1 connector, aprons and associated taxilanes, the automobile parking lot, and access road. All work will occur on existing paved surfaces on the airport property and no additional impervious surfaces will be created. The proposed project totals 23.29 acres of asphalt and will require approximately 120 calendar days to complete. Construction is scheduled to commence in 2017. The proposed project is included in the approved 2003 Airport Layout Plan. The applicant certifies that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program. Based on DEQ's review of the FCC and the comments from reviewing agencies, DEQ concurs that the proposal is consistent, to the maximum extent practicable, with the enforceable policies of the Virginia Coastal Zone Management

Program provided the applicant obtains all required permits and authorizations with respect to erosion and sediment control, solid waste management, and air pollution control.

#### Independence Boulevard-New Connector Road

DEQ completed a coordinated review of a Federal Consistency Certification (FCC) submitted by the City of Newport News for the Independence Boulevard project. The Norfolk District of the U.S. Army Corps of Engineers (Corps) is reviewing a Joint Permit Application submitted by the City of Newport News (applicant) for the issuance of an individual permit pursuant to Sections 401 and 404 of the Clean Water Act (CWA) for impacts to jurisdictional waters of the United States from the proposed Independence Boulevard Project. The City of Newport News proposes to construct a new connector road named Independence Boulevard to relieve traffic congestion in the northern district of the city. The proposed road will run from the intersection of Fort Eustis Boulevard and Richneck Road, southward along the existing Richneck Road right-of-way (ROW) for approximately 0.5-mile before crossing land adjacent to a power line easement for another 0.8-mile. The road will curve away from the power line easement in a southwesterly direction and terminate at a point where the entrance road for an approved residential/commercial development (Huntington Pointe) is currently under construction. A wetlands delineation has been performed and impacts associated with the roadway construction will total approximately 1.7 acres. Mitigation will occur via the purchase of wetland credits from a bank that serves the Lower James River watershed. The project is intended to decrease traffic congestion in the area and improve the connectivity of major traffic arteries for local residents. The applicant has submitted a FCC that finds the proposed action consistent with the enforceable policies of the Virginia Coastal Zone Management Program. Based on DEQ's review of the FCC and the comments from reviewing agencies, DEQ concurs that the proposal is consistent, to the maximum extent practicable, with the enforceable policies of the Virginia Coastal Zone Management Program provided the applicant obtains all required permits and authorizations with respect to impacts to erosion and sediment control, stormwater management, wetlands impacts, and air pollution control. Further coordination with DCR and DGIF regarding a long-term plan for the Grafton Ponds Complex is recommended.

#### Eastern Market Access Project, Dominion Cove Point LNG LP

Dominion Cove Point (Dominion) is seeking authorization from the Federal Energy Regulatory Commission (FERC) to construct, install, own, operate and maintain facilities pursuant to Section 7 of the Natural Gas Act in Charles County, Maryland, and Loudoun County and Fairfax County, Virginia. The portion of the project in Fairfax County is the focus of the federal consistency review. In Fairfax County, Dominion proposes to make improvements to the Pleasant Valley compressor station. The proposed construction activities include reconfiguring a 17,400 horsepower (hp) electric unit at the existing compressor station and upgrading two existing gas coolers. No land disturbance is proposed. The project as a whole is designed to provide approximately 150,000 additional dekatherms per day (Dt/d) of natural gas to Washington Gas Light Company and approximately 144,000 Dt/d of additional natural gas to Mattawoman Energy, LLC (a total of 294,000 Dt/d) to help meet the increasing demand for natural gas. DEQ concurred that the proposal is consistent with the Virginia CZM Program provided all applicable permits and approvals are obtained.

#### **IV. Outer Continental Shelf Activities**

No projects were reviewed during the time period of this report for this category.

## V. Federal Funds

DEQ completed the reviews of 30 projects from October 1, 2016 to March 31, 2017 that were submitted under 15 CFR, Part 930, Subpart F for federal financial assistance to state and local governments. The projects break out as follows:

1	new home construction
17	home rehabilitation/weatherization
12	new multifamily housing construction/rehabilitation
5	demolitions of blighted property
2	VIMS EPA grant application
1	ICPRB EPA grant application
2	community facility construction/rehabilitation
2	recreational trail grant
1	boat ramp
1	ADA ramp

Examples of Federally –funded projects which were reviewed:

### Ballahack Road Boat Ramp Area Improvements

According to the Federal Consistency Certification (FCC) and enclosures, the City of Chesapeake plans to utilize Federal Lands Access Program (FLAP) funds from the Federal Highway Administration (FHWA) to make improvements to the Ballahack Road Boat Ramp located approximately 1,500 linear feet north of Ballahack Road, adjacent to the southern terminus of the Dismal Swamp Canal Trail, in the City of Chesapeake. The project involves the construction of a new parking area in the location of the existing gravel lot, a picnic shade shelter with sidewalk, enclosed portable sanitary facilities, minor landscaping, interpretive signage and micro-stormwater management features. DEQ concurred that the proposal is consistent with the Virginia CZM Program provided all applicable permits and approvals are obtained.

### Renovation of Residential Dwelling, 4512 Hubbard Avenue

The Suffolk Redevelopment and Housing Authority (SRHA) intends to use U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant (CDBG) funding for the renovation of a residential dwelling located at 4512 Hubbard Avenue. Renovation activities include interior improvements (replace kitchen floor and kitchen sink faucets), exterior improvements (roof replacement, gutter replacement, and replace windows). DEQ concurred that the proposal is consistent with the Virginia CZM Program provided all applicable permits and approvals are obtained.

### Gateway at King and Bearegard Project, Multiuse Apartments

The City of Alexandria intends to use HOME funding from the U.S. Department Housing and Urban Development (HUD) for the Gateway at King and Bearegard Mixed-Use Project located at 4600 King Street in the City of Alexandria. The City intends to demolish the existing commercial buildings (some vacant) on the site along King Street and construct a 3-building, mixed-use development with approximately 618,000 gross square feet of residential, retail, and office floor area. There will be two multifamily buildings on the site, both of which will have ground floor retail, and one of which will have an office component. The third building will be for office use with some retail on the ground floor. All buildings will be served by a 2-level underground garage spanning the entire site. DEQ concurred that the proposal is consistent with the Virginia CZM Program provided all applicable permits and approvals are obtained.



#### Water Quality and Biological Data Management, ICPRB EPA Grant Application

The Interstate Commission on the Potomac River Basin (ICPRB) is applying for a U.S. Environmental Protection Agency (EPA) FY 2016 grant for a project titled “CBP Water Quality and Biological Data Management.” ICPRB proposes to provide staff who have significant, in-depth professional experience in the acquisition, quality assurance review, management, maintenance, and dissemination of water quality and biological monitoring data. Staff will support Chesapeake Bay Program (CBP) efforts to meet commitments made in various Chesapeake Bay Agreements and Executive Order 13508. ICPRB has an interest in the project area, is highly qualified to accomplish the activity, and is eligible to receive a federal assistance agreement. ICPRB will provide a full time staff person located on-site at the Chesapeake Bay Program offices in Annapolis, Maryland. The EPA will provide office space and the computer hardware and software. The position will be assisted, as funds permit, by ICPRB staff in the acquisition, quality assurance review, and maintenance of CBP biological databases. ICPRB aquatic biologists in Rockville have extensive experience with the existing CBP stream benthic macroinvertebrate and tidal phytoplankton databases. The position’s primary responsibility will be the maintenance of the authoritative sets of water quality and biological monitoring data and programmatic information generated by the CBP partnership. DEQ concurred that the proposal is consistent with the Virginia CZM Program provided all applicable permits and approvals are obtained.

#### Demolition of 828 22nd Street Single-family Home

The Newport News Redevelopment and Housing Authority (NNRHA or applicant) proposes to demolish the single-family home located at 828 22nd Street in the City of Newport News, Virginia. Constructed in 1920, the property encompasses roughly 0.06 acres of developed land. The lot will be regraded. There are no plans to replace the structure at this time. Federal funding for the demolition will come from the U.S. Department of Housing and Urban Development (HUD). DEQ concurred that the proposal is consistent with the Virginia CZM Program provided all applicable permits and approvals are obtained.

### **SECTION B.4 PROGRAM CHANGES**

During the reporting period, the Virginia CZM Program worked to develop draft narrative enforceable policies for the Department of Game and Inland Fisheries (DGIF) and the Department of Agriculture and Consumer Services (DACS), including new policies for state-listed threatened and endangered species of animals, plants and insects. Four advisory committee meetings were held by the William & Mary Coastal Policy Center (CPC) supported by a Virginia CZM grant. CPC staff researched other state CZM program narrative policies, organized the advisory committee, and drafted narrative policies for consideration by the committee. The advisory committee consisted of representatives from NOAA, DGIF, the Department of Environmental Quality, the Department of Conservation and Recreation – Division of Natural Heritage, the Department of Transportation, the Office of the Attorney General, the Department of Defense, and the Hampton Roads Planning District Commission. CZM staff also worked with the CPC to draft scopes of work for development of additional narrative policies. The November, 2016 Coastal Partners Workshop included a session on federal consistency and narrative policy development, and Virginia CZM staff provided an update on the project to the Coastal Policy Team at its January, 2017 meeting.